UNIVERSITY CALENDAR,

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THE MADRAS UNIVERSITY CALENDAR, 1890-91.

VOL. II.

EXAMINATION PAPERS.

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1890

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EXAMINATION PAPERS, DECEMBER, 1889.

MATRICULATION.

MONDAY, 16TH DECEMBER, 10 A.M. TO 1 P.M.

ENGLISH LANGUAGE.

I. Paraphrase:—

But what strange art—what magic can dispose
The troubled mind to change its native woes,
Or lead us willing from ourselves to see
Others more wretched, more undone than we?
This books can do;—nor this alone, they give
New views of life, and teach us how to live;
They soothe the grieved, the stubborn they chastise,
Fools they admonish, and confirm the wise;
Their aid they yield to all; they never shun
The man of sorrow, nor the wretch undone;
Unlike the hard, the selfish, and the proud,
They fly not sullen from the suppliant crowd,
Nor tell to various people various things,
But show to subjects what they show to kings.

II. Turn all that is direct in the following into indirect narration:—

"Gentlemen," I said after silence had been restored, "there are more things in heaven and earth than are dreamt of in your philosophy. Do not be astonished at my statement. Is it fair to judge me by appearance only?" "We never have judged," replied one of my hearers, "and we never will judge you in this way." "What a wonderful admission!" I said, "surely you cannot mean what you now assert." He responded "How can you doubt it? Would that I could restore your confidence in our fidelity!" "Show it by action," was my answer, "and you need never fear my disapproving of your conduct."

III. 1. Re-write the following sentences as required, making the necessary but only the necessary changes:—

(*a*) The magistrate was too keen a judge of men to misunderstand the character of the witness. *Use 'so' instead of 'too.'*

(*b*) He is supposed not to have done his exercise himself. *Make 'exercise' the subject.*

(*c*) He is almost the best scholar in the class. *Use the positive instead of the superlative*

2. Express each of the following as a *simple* sentence:—

(*a*) It seems that he has gained the prize for good conduct.

(*b*) He left instructions about how his property should be disposed of.

(*c*) They loaded the guns as quietly as they could.

(*d*) I am disappointed that I have not received a letter from you.

IV. 1. Combine into one *simple* sentence the following:—The general marched upon the enemy. He marched upon them on the 25th of April. He did so after some light skirmishing. He routed the enemy. He routed them with great slaughter. The slaughter was so great as to cause astonishment in the minds of the populace.

2. State what part of speech each of the following italicised expressions is equivalent to, and give its construction:—*The moon having risen*, the leader of the band addressed his men, saying that the task before them was as dangerous *as it was difficult*; yet they would be mad *to neglect this opportunity*; *at the worst* they could still die like brave men.

3. Use a *clause* for the *phrase* italicised in each of the following so as to bring out the exact force of '*for*':—(*a*) He knows a great deal *for a lad of ten*. (*b*) *For all his possessions* he was discontented. (*c*) He has been educated *for the bar*. (*d*) Oh *for a lodge* in some vast wilderness.

V. 1. Give adjectives (not participles) derived from *fire*, *fraud*, *joke*; verbs from *gold*, *secret*, *half*; and abstract nouns (not participles) from *social*, *prevail*, *speak*.

2. Give a verb, an adjective, and a noun formed from each of the following words:—*human*, *trust*, *friend*.

VI. 1. Write sentences containing the following expressions so as to distinguish their meaning:—*confer with*, *confer upon*; *prevail over*, *prevail with*; *official*, *officious*; *waive*, *wave*.

2 The following words have different meanings according to the position of the accents:—*invalid*, *incense*, *instinct* Write each word first with one accent and then with the other, and give in each case the meaning

VII. 1. Give in four sentences the meaning of "*It is my duty to study hard*," using in each the proper form of one of the following expressions:—*be incumbent*, *devolve*, *bind*, *oblige*. Similarly give the meaning of "*I agree to this*" by using the following:—*acquiesce*, *assent*, *concur*, *subscribe*.

2. Write the following sentences correctly:—(*a*) Of all others he is by far the best pupil. (*b*) Robert has been unwell since four days. (*c*) He was more popular but not so much esteemed as his predecessor. (*d*) A boy is known from the character of those who he associates with.

VIII. State what the italicised word in each of the following metaphors is compared to:—

1. A *doubt* ever smouldered in their hearts.

2. A hundred *hills* their dusky backs upheaved above the silent ocean.

3. The noble youth had reaped the highest *honours*.
4. His *cheek* was ploughed with the furrows of years.

IX As an exercise in composition, write an essay not exceeding two pages on "the benefits arising from gymnastics."

MONDAY, 16TH DECEMBER, 2 TO 5 P.M.

ENGLISH TEXT.

I. Paraphrase:—

1. There is a comfort in the strength of love;
   'Twill make a thing endurable, which else
   Would break the heart;—Old Michael found it so.
2. Disgust concealed
   Is oft-times proof of wisdom, when the fault
   Is obstinate, and cure beyond our reach.
3. Her heart was in her house.
4. He could look his troubles in the face.
5. Among the stones I stood a stone.
6. The shark is in London, and the shark's prey.

II. 1. Who were Milton, Newton, and the Mantuan Bard, and how does Cowper refer to each of them?

2 Give a *short* account of the incidents alluded to in the following extracts:—(*a*) 'Twas Pilate's question put to Truth itself, that deigned him no reply. (*b*) Foolish man foregoes his proper bliss, even as his first progenitor, and quits (though placed in Paradise) substantial happiness for transient joy. (*c*) Ten righteous would have saved a city once.

III. 1. Give in simple prose an account (not exceeding one page in length) of the cultivation of the cucumber.

2. Describe briefly, with the names of the persons referred to, the incidents with which the following extracts are connected:—(*a*) Turning his own gifts against the giver. (*b*) On one occasion his vigilance had well nigh proved fatal to him. (*c*) The man whom the hostile array of armies could not daunt, was not to be turned from his purpose by a woman's prayers.

IV. 1. Point out anything faulty in the grammar or construction of the following extracts:—(*a*) We have no other child but thee to lose. (*b*) Sometimes was he seen sitting alone with that his faithful dog.

2. State the part of speech and the construction and meaning of the words in italics in the following:—(*a*) Discharge *but* these kind offices. (*b*) Not a rood of land *but* was under cultivation. (*c*) His safety left no alternative *but* to anticipate the blow.

3. State the part of speech and the construction of the words in italics in the following:—(*a*) Such herds *as* make London, vast and boundless *as* it is, a crowded coop. (*b*) The Spaniards were *as* incapable of being circumvented by artifice, *as* of being crushed by weight of numbers in the open field. (*c*) Such feelings of security *as* the general could inspire him with.

V. Re-write the following without using any figurative language:—

1. All flesh is grass.

2. The wings that waft our riches out of sight grow on the gamester's elbows.

3. The cloud of slavery is not without its silver lining.

4. What chance that I should crack the satiric thong?

VI. 1. Explain clearly the meaning of the words in italics in the following:—

(*a*) The link by which one common maker bound me to the *kind*. (*b*) So manifold all pleasing in their *kind* are the employs of rural life. (*c*) In the court of one of these temples they were *quartered*. (*d*) A great sacrifice of children had been offered up in a distant *quarter* of the town. (*e*) *Quarter* was offered to the garrison.

2. Give the meaning of the following phrases:—to tell her beads; hunter's fare; summer-month retreats; metropolitan volcanoes; cardinal points; a sort of tropical Holland; the false modesty of self-depreciation.

3. What is the meaning intended to be conveyed by italicising the words '*are said*' in the following?

Six thousand victims *are said* to have been annually offered up at their sanguinary shrines.

VII. In the following sentences make the changes asked:—

1. Luke was in his eighteenth year. (*Use the cardinal number.*)

2. None trembled more than the Aztec emperor on his throne among the mountains. (*Use the positive of 'more'*)

3. Mr. Ohlsen dropped asleep as soon as the sledge began to move. (*Begin with 'No sooner.'*)

4. It was intended that the embassy should reach the Spaniards before they crossed the mountains. (*Use the verb 'crossed' with the word 'not.'*)

TUESDAY, 17TH DECEMBER, 10 A.M. TO 1 P.M.

SANSKRIT:—TEXT-BOOKS AND GRAMMAR.

I. 1. Explain the titles of the fourth and fifth parts of the Panchatantra.

2. Give the moral of the story of the "washerman's ass."

3. According to the Panchatantra how are the different classes of enemies to be treated?

4. Give the modern name of Pāṭaliputra; where is it located by the Panchatantra?

5. Mention the four angas referred to in चतुरङ्गिणी सेना.

II. 1. Give the name of Vālmīki's disciple.

2. By what achievement did Rāma convince Sugrīva of his ability to subdue Vāli?

3. What were the omens that announced Paraśurāma's advent to Daśaratha and his army on their way from Mithilā?

4. Give the history of Paraśurāma's bow Who gets it at last?

5. Is there any blood relationship between Paraśurāma and Visvāmitra?

III. 1. Show the appropriateness of the comparisons in समुद्र इव गाम्भीर्ये धैर्येण हिमवानिव । कालाग्निसदृशः क्रोधे क्षमया पृथिवीसमः ॥

2 In what context do the following occur:—(a) शशिनं रोहिणी यथा, (b) सन्मनुष्यमनो यथा, (c) शरैरादित्यसन्निभैः.

IV. 1. What is the force or meaning of the words underlined in (a) लघुपराक्रमः, (b) लघुभ्राता, (c) ततस्तेनैव शोकेन, (d) रामपादप्रसादकः, (e) मरतकसदृशशष्पप्रायाः प्रदेशाः, (f) भीमसङ्काशः, (g) महेन्द्रकृतकेतनः, (h) ब्राह्मणोऽसीति पूज्यो मे विश्वामित्रकृतेन च.

2. In what unusual sense is each of the following words used in your text:—(a) कलभः, (b) बाह्यः, (c) हिरण्यम् and (d) सम्पन्नम् in सम्भाव्यं गोषु सम्पन्नम्.

3. Point out any grammatical or idiomatic irregularities in (a) यथेच्छया, (b) युद्ध्यमानः, (c) अन्तर्विषमया ह्येताः, (d) यथा तेनारदात् श्रुतम् (e) वियुक्ता पतिना तेन.

V. Give in English the meaning of the following words or expressions:—

1 कदर्थितः 2. खलीनम् 3 निष्कासितः 4. धूर्तः 5. दासेरकः 6. आततायिन् 7. श्राद्धकः 8. सिद्धिः 9. व्यतिकरः 10. प्रतिभानवान् 11. पृथग्जनः 12. अनुसृष्टम् 13 नैगमः 14. सत्यपराक्रमः 15. कारुण्यवेदित्वात् 16. हालिकः 17. गृहीतनिर्वापः

18. परामर्शः Two meanings of 19. आद्यम् and 20. सत्त्वम्.

VI. Explain with the assistance of the context where necessary :-

1 ग्रहणं समुपागतः. 2. तत्किन्तेन भव्यप्रदेशेन. 3. तद्दीयताम द्रागेवास्य चन्द्रार्धः 4. जीवन्नरो भद्रशतानि पश्यति. 5. सोहम् गुरुवचः कुर्वन् पृथिव्याम् न वसे निशाम्. 6. अन्तर्गतमपि व्यक्तमाख्याति हृदयं हृदा। तस्य भूयो विशेषेण मैथिली जनकात्मजा ॥ 7. दुर्जनः परिहर्तव्यो विद्ययालङ्कृतोऽपि सन्। मणिना भूषितस्सर्पः किमसौ न भयङ्करः ॥

VII. 1. Decline (*a*) आपः (*b*) युवन् in the singular masculine and (*c*) एतद् in the feminine only.

2 Conjugate (*a*) रुधू in present (लट्) and imperfect (लङ्) Parasmaipada and (*d*) कृ in the same tenses in the Ātmanēpada.

3. Parse the following words :—(*a*) निजघान, (*b*) पुष्टुवे, (*c*) जहि, (*d*) न्यस्यताम्.

4. Dissolve the following compounds into their constituent parts:—(*a*) अन्याचित्ता (*b*) चातुर्वर्ण्यम् (*c*) यथेच्छम् (*d*) मद्भुजपञ्जरपरिरक्षितः (*e*) शिखिभुक्तमुक्तः (*f*) इक्ष्वाकुवंशप्रभवः.

5. Give the (*a*) present participles passive and (*b*) past participles of पच्, रम्, वद् and भिद्.

6 What case in Sanskrit expresses the force of the words *in italics* in each of the following:—(*a*) the tiger seizes him *by* the neck; (*b*) this is less *than* half; (*c*) he goes *to* school. I am afraid *of* snakes here.

TUESDAY, 17TH DECEMBER, 2 TO 5 P.M.

SANSKRIT: TRANSLATION.

I. Translate into English:—

1. (*a*) महान्त एव महतामर्थं साधयितुं क्षमाः।

ऋते समुद्रादन्यः को बिभर्ति वडवानलम् ॥

(b) जीर्यन्ति जीर्यतः केशा दन्ता जीर्यन्ति जीर्यतः ।
चक्षुःश्रोत्रे च जीर्येते तृष्णैका न तु जीर्यति ॥

(c) यः पृष्ट्वा कुरुते कार्यं प्रष्टव्यान् स्वहितान् गुरून् ।
न तस्य जायते विघ्नः कस्मिंश्चिदपि कर्मणि ॥

(d) अन्त्यावस्थां गतोऽपि
महान्स्वगुणाञ्जहाति न शुद्धतया ।
न श्वेतभावमुज्झति •
शङ्खः शिप्रखिभुक्तमुक्तोऽपि ॥

(e) उपस्थितं भयं घोरं दिव्यपक्षिमुखाच्च्युतम् ।
मृगाः प्रशमयन्त्येते सन्तापस्त्यज्यतामयम् ॥

(f) तदिदं वैष्णवं राम पितृपैतामहं महत् ।
क्षत्रधर्मं पुरस्कृत्य गृह्णीष्व धनुरुत्तमम् ॥
योजयस्व धनुःश्रेष्ठे शरं परपुरञ्जयम् ।
यदि शक्नोषि काकुत्स्थ द्वन्द्वं दास्यामि ते तदा ॥

(g) चोदयित्वा पुनः सेनां जगाम स्वपुरीं प्रति ।
समुच्छ्रितध्वजवतीं तूर्योद्घुष्टनिनादिताम् ।
सिक्तराजपथां रम्याम् प्रकीर्णकुसुमोत्कराम् ।
राजप्रवेशसुमुखैः पौरैर्मङ्गलपाणिभिः ।
सम्पूर्णां प्राविशद्राजा जनौघैः समलंकृताम् ॥

(h) तया स राजर्षिसुतोऽभिकामया
समेयिवान् उत्तमराजकन्यया ।

अतीव रामः शुशुभे मुदान्वितो
विभुः श्रिया विष्णुरिवामरेश्वरः ॥

2. एवं संस्तुत्य ततः प्रधानक्षपणकमासाद्य क्षितिनिहितजानुचरणो नमोऽस्तु वन्द इत्युच्चार्य लब्धधर्मवृद्ध्याशीर्वादः सुखमालिकानुग्रहलब्धव्रतादेश उत्तरीयनिबद्धग्रन्थिः सप्रश्रयमिदमाह भगवन् अद्य विहरणक्रिया समस्तमुनिसमेतेनास्मद्गृहे कर्तव्या । स आह भोः श्रावक धर्मज्ञोऽपि किमेवं वदसि किं वयं ब्राह्मणसमाना यत आमन्त्रणं करोषि । वयं सदैव तत्कालपरिचर्यया भ्रमन्तो भक्तिभाजं श्रावकमवलोक्य तस्य गृहे गच्छामस्तेन कृच्छ्रादभ्यर्थिताः । तद्गृहे प्राणधारणमात्रामशनक्रियां कुर्मः । तद्गम्यतां नैवं भूयोऽपि वाच्यम् । तच्छ्रुत्वा नापित आह भगवन् वेद्म्यहं युष्मद्धर्मम् ॥

3. (a) अकालसहं कार्यं यशस्वी न विलम्बेन कुर्यात् ॥

(b) खादनवेलायां को नाम कस्य न सहायः ॥

(c) अन्धेनाकृष्यमाणोऽन्धः समं पन्थानं न प्रतिपद्यते ॥

(d) अनालोकं लोचनमिवाशास्त्रं मनुः कियद्वा पश्येत् ॥

(e) विषमपुरुषसङ्गे हि दुर्लभमैकमत्यम् ॥

(f) कालातिक्रमान्नखच्छेद्यमपि कार्यं भवति कुठारच्छेद्यम् ॥

II. Translate into Sanskrit :—

As a boy was sitting on the brink of a well, weeping loudly, a thief came and seeing him, asked him why he was crying. He answered : " As I was playing here, I looked into this well, when the necklace of pearls that was on my neck slipped off and fell into the water Now, if I go home without the necklace, my parents will beat me; on this account I am crying." The thief, thinking he would be able to steal it, said to him : " Do not be afraid, my lad, I shall go down into the well and get your pearl necklace; you only

take care of my clothes." Having left his clothes on the bank, he descended into the well naked As soon as he had got to the bottom, the boy took his clothes and ran away with them. The thief having searched a long time and not finding the necklace, came up again; but not seeing the boy anywhere, he exclaimed, "even I who am a rogue have been deceived by a boy" Therefore, however clever a person thinks himself to be, he may be outwitted by others.

TUESDAY, 17TH DECEMBER, 10 A.M. TO 1 P.M.

GREEK: TEXT-BOOKS AND GRAMMAR.

I. 1. Decline. (*a*) in full:—*τεῖχος, ὀξύς, οὗτος.* (*b*) in the singular only:—*κριτής τις.* (*c*) in the dual and plural only:—*παῖς μέγας; γυνὴ ἀσθενής.*

2. Give the accusative singular of *βασιλεύς* and *μέλας*; the genitive singular of *πατήρ* and *λευκώς*; the nominative plural of *κέρας* and *πᾶς*; and the dative plural of *χαρίεις* and *ἑαυτόν.*

II. Write down the comparative and superlatives of *καλός, ὀλίγος, αἰσχρός, μέσος, εὔνους, σοφῶς.*

III. 1. What is the Greek for 9; 15; 40; 200; 7th; 16th; 23rd; once; of three dogs; 100 horses; I did this myself?

2. Distinguish between *ἄλλοι* and *οἱ ἄλλοι*; *πρὸς τούτοις* and *πρὸς ταῦτα*; *διὰ σοῦ* and *δι' σέ*; *ὁ ἀγαθὸς ἄνθρωπος* and *ὁ ἄνθρωπος ἀγαθός*; *ἀνήρ*, and *ἀνήρ.*

IV. 1. Write out in full the first or Weak Aorist Imperative, Active and Middle, of *λύω*; the Perfect Indicative Active and Passive of *τύπτω*; the Present Optative Active of *σιγάω* and *ἵημι*, the Second or Strong Aorist Subjunctive Active and Middle of *δίδωμι.*

2. Give the 3rd Person Plural *only* of the following:—Present Indicative Active of *τίθημι* and *τιμάω*; Future Indicative Active and Middle of *φαίνω*; Present Imperative Active of *ἵστημι* and *δείκνυμι*; Imperfect Indicative Middle of *δηλόω* and *ἵημι.*

V 1. What verbs form their First or Weak Aorist in — *κα*? Conjugate any one such tense.

2. Parse *σέθεν, πεφυκέναι, ἐξελᾷς, ἡψάμην, μολών, προδούς, παθεῖν, ὄλωλα.*

VI. To what tenses is the Augment prefixed? Distinguish between Syllabic and Temporal Augment, and write down the Imperfect Indicative (1st Person Singular *only*) of *ἄγω, αἱρέω, ῥίπτω, ἔχω, ὁράω, ἐκβάλλω.*

VII. 1. What is the difference in meaning between *πείθω* and *πείθομαι*; *παύω* and *παύομαι*; *εἷλον* and *εἱλόμην*; *τύπτουσι* and *τύπτονται* (Middle)?

2. Write down the Paradigms of οἶδα, εἰμί (*I am*), εἶμι (*I shall go*), φημί, the 2nd or Strong Aorist Active of ἔχω and ἵστημι.

N.B.—*Do not write out the whole of each tense or participle.*

VIII. Translate and account for the cases of the words underlined:—

1. μίαν με μεῖναι τήνδ' ἔασον ἡμέραν.
2. κἀγὼ πόλιν σὴν ὡς τάχιστ' ἀφίξομαι
πράξασ' ἃ μέλλω καὶ τυχοῦσ' ἃ βούλομαι.
3. ὦ δυστάλαινα τῆς ἐμῆς αὐθαδίας.
4. ὄλβου δ' ἐπιρρυέντος εὐτυχέστερος
ἄλλου γένοιτ' ἂν ἄλλος, εὐδαίμων δ' ἂν οὔ.
5. Ἀλλ' ἢ ἐπελάθου τι ὧν ἐβούλου εἰπεῖν.
6. Πῶς μήν, ἔφη, παῖδας ὄντας ἡμᾶς καὶ ἐφήβους τἀναντία τούτων ἐδιδάσκετε;

IX. 1. Shew by examples, giving the English, how the following are expressed in Greek:—(*a*) a wish; (*b*) a prohibition; (*c*) the agent; (*d*) a purpose.

2. Derive the word "Aorist" and distinguish carefully between the use of the Imperfect and Aorist tenses.

3. How is the Reduplication of a verb formed, (*a*) if the first consonant of the stem is an aspirate, (*b*) if the stem begins with two consonants?

X. Translate and explain the allusions:—

1. πῶς οὖν ἱερῶν ποταμῶν
ἢ πόλις ἢ φίλων
πόμπιμός σε χώρα
τὰν παιδολέτειραν ἕξει,
τὰν οὐχ ὁσίαν μετ' ἄλλων;
2. εἴθ' ὤφελ' Ἀργοῦς μὴ διαπτάσθαι σκάφος
Κόλχων ἐς αἶαν κυανέας Συμπληγάδας.
3. πῶς σὺ οἶσθα; Ὅτι ὁ διδάσκαλός με, ὡς ἤδη ἀκριβοῦντα, τὴν δικαιοσύνην καὶ ἄλλοις καθίστη δικάζειν. καὶ τοίνυν ἐπὶ μιᾷ ποτε δίκῃ πληγὰς ἔλαβον ὡς οὐκ ὀρθῶς δικάσας. Complete the story.

TUESDAY, 17TH DECEMBER, 2 TO 5 P.M.

GREEK: TRANSLATION.

I Translate into English:—

1. ἀλλ' ἔν τί μοι πρόσαντες· εἰ ληφθήσομαι
δόμους ὑπερβαίνουσα καὶ τεχνωμένη,
θανοῦσα θήσω τοῖς ἐμοῖς ἐχθροῖς γέλων.

κράτιστα τὴν εὐθεῖαν, ᾗ πεφύκαμεν
σοφοὶ μάλιστα, φαρμάκοις αὐτοὺς ἑλεῖν·
εἶεν·
καὶ δὴ τεθνᾶσι· τίς με δέξεται πόλις;
τίς γῆν ἄσυλον καὶ δόμους ἐχεγγύους
ξένος παρασχὼν ῥύσεται τοὐμὸν δέμας;
οὐκ ἔστι. μείνασ' οὖν ἔτι σμικρὸν χρόνον,
ἢν μέν τις ἡμῖν πύργος ἀσφαλὴς φανῇ,
δόλῳ μέτειμι τόνδε καὶ σιγῇ φόνον,
ἢν δ' ἐξελαύνῃ ξυμφορά μ' ἀμήχανος,
αὐτὴ ξίφος λαβοῦσα, κεἰ μέλλω θανεῖν,
κτενῶ σφε, τόλμης δ' εἶμι πρὸς τὸ καρτερόν.

2 ΜΗ. τί δῆτα Φοῖβος εἶπέ σοι παίδων πέρι;
ΑΙ. σοφώτερ' ἢ κατ' ἄνδρα συμβαλεῖν ἔπη.
ΜΗ. θέμις μὲν ἡμᾶς χρησμὸν εἰδέναι θεοῦ;
ΑΙ. μάλιστ', ἐπεί τοι καὶ σοφῆς δεῖται φρενός.
ΜΗ. τί δῆτ' ἔχρησε; λέξον, εἰ θέμις κλύειν.
ΑΙ. ἀσκοῦ με τὸν προὔχοντα μὴ λῦσαι πόδα
ΜΗ. πρὶν ἂν τί δράσῃς ἢ τίν' ἐξίκῃ χθόνα;
ΑΙ. πρὶν ἂν πατρῴαν αὖθις ἑστίαν μόλω.
ΜΗ. σὺ δ' ὡς τί χρῄζων τήνδε ναυστολεῖς χθόνα;
ΑΙ. Πιτθεύς τις ἔστι γῆς ἄναξ Τροιζηνίας.
ΜΗ. παῖς, ὡς λέγουσι, Πέλοπος εὐσεβέστατος.
ΑΙ. τούτῳ θεοῦ μάντευμα κοινῶσαι θέλω.
ΜΗ. σοφὸς γὰρ ἀνὴρ καὶ τρίβων τὰ τοιάδε.
ΑΙ. κἄμοιγε πάντων φίλτατος δορυξένων.
ΜΗ. ἀλλ' εὐτυχοίης, καὶ τύχοις ὅσων ἐρᾷς.

3. χρυσοῦς μὲν ἀμφὶ κρατὶ κείμενος πλόκος
θαυμαστὸν ἵει νᾶμα παμφάγου πυρός·
πέπλοι δὲ λεπτοί, σῶν τέκνων δωρήματα,
λευκὴν ἔδαπτον σάρκα τῆς δυσδαίμονος.
φεύγει γ' ἀναστᾶσ' ἐκ θρόνων πυρουμένη,
σείουσα χαίτην κρᾶτά τ' ἄλλοτ' ἄλλοσε,
ῥῖψαι θέλουσα στέφανον· ἀλλ' ἀραρότως
σύνδεσμα χρυσὸς εἶχε, πῦρ δ', ἐπεὶ κόμην
ἔσεισε, μᾶλλον δὶς τόσως τ' ἐλάμπετο.
πίτνει δ' ἐς οὖδας ξυμφορᾷ νικωμένη,
πλὴν τῷ τεκόντι κάρτα δυσμαθὴς ἰδεῖν·

4. καὶ ὁ Κῦρος πάντα ταῦτα ἐμάνθανε προθύμως. ὡς δὲ εἶδεν ἔλαφον ἐκπηδήσασαν, πάντων ἐπιλαθόμενος ὧν ἤκουσεν ἐδίωκεν οὐδὲν ἄλλο ὁρῶν ἢ ὅπῃ ἔφευγε. καί πως διαπηδῶν

αὐτῷ ὁ ἵππος πίπτει εἰς γόνατα, καὶ μικροῦ κἀκεῖνον ἐξετραχήλισεν. οὐ μὴν ἀλλ' ἐπέμεινεν ὁ Κῦρος μόλις πως, καὶ ὁ ἵππος ἐξανέστη. ὡς δὲ εἰς τὸ πεδίον ἦλθεν, ἀκοντίσας καταβάλλει τὴν ἔλαφον, καλόν τι χρῆμα καὶ μέγα. καὶ ὁ μὲν δὴ ὑπερέχαιρεν. οἱ δὲ φύλακες προσελάσαντες ἐλοιδόρουν αὐτὸν καὶ ἔλεγον εἰς οἷον κίνδυνον ἔλθοι, καὶ ἔφασαν κατερεῖν αὐτοῦ. ὁ οὖν Κῦρος εἱστήκει καταβεβηκώς, καὶ ἀκούων ταῦτα ἠνιᾶτο. ὡς δ' ᾔσθετο κραυγῆς, ἀνεπήδησεν ἐπὶ τὸν ἵππον ὥσπερ ἐνθουσιῶν, καὶ ὡς εἶδεν ἐκ τοῦ ἀντίου κάπρον προσφερόμενον, ἀντίος ἐλαύνει καὶ διατεινάμενος εὐστόχως βάλλει εἰς τὸ μέτωπον καί κατέσχε τὸν κάπρον.

5. Ἀλλὰ μήν, ὁ Κῦρος ἔφη, εἴς γε τὸ προθυμίαν ἐμβαλεῖν στρατιώταις οὐδέν μοι δοκεῖ ἱκανώτερον εἶναι ἢ τὸ δύνασθαι ἐλπίδας ἀγαθὰς ἐμποιεῖν ἀνθρώποις. Ἀλλ', ἔφη, ὦ παῖ, τοῦτό γε τοιοῦτόν ἐστιν οἷόνπερ εἴ τις κύνας ἐν θήρᾳ ἀνακαλοῖτο ἀεὶ τῇ κλήσει ᾧπερ ὅταν τὸ θηρίον ὁρᾷ. τὸ μὲν γὰρ πρῶτον προθύμως εὖ οἶδ' ὅτι ἔχει ὑπακουούσας. ἢν δὲ πολλάκις ψεύδηται αὐτάς, τελευτῶσαι οὐδ' ὁπόταν ἀληθῶς ὁρῶν καλῇ πείθονται αὐτῷ. οὕτω καὶ τὸ περὶ τῶν ἐλπίδων ἔχει. ἢν πολλάκις προσδοκίας ἀγαθῶν ἐμβαλὼν ψεύδηταί τις, τελευτῶν οὐδ' ὁπόταν ἀληθεῖς ἐλπίδας λέγῃ ὁ τοιοῦτος πείθειν δύναται. ἀλλὰ τοῦ μὲν αὐτὸν λέγειν ἃ μὴ σαφῶς εἰδείη φείδεσθαι δεῖ, ὦ παῖ, ἄλλοι δ' ἐνίοτε λέγοντες ταὐτὰ ἂν διαπράττοιεν. τὴν δὲ αὐτοῦ παρακέλευσιν εἰς τοὺς μεγίστους κινδύνους δεῖ ὡς μάλιστα ἐν πίστει διασώζειν.

6. (Not from text-books.)

"From the choice of Hercules"

Καὶ ὁ Ἡρακλῆς ἀκούσας ταῦτα, Ὦ γύναι, ἔφη, ὄνομα δέ σοι τί ἐστιν; ἡ δέ, Οἱ μὲν ἐμοὶ φίλοι, ἔφη, καλοῦσί με Εὐδαιμονίαν, οἱ δὲ μισοῦντές με ὀνομάζουσι Κακίαν . . . . . καὶ ἡ Κακία ὑπολαβοῦσα εἶπεν, Ἐννοεῖς, ὦ Ἡράκλεις, ὡς χαλεπὴν, καὶ μακρὰν ὁδὸν ἐπὶ τὰς εὐφροσύνας ἡ γυνή σοι αὕτη διηγεῖται; ἐγὼ δὲ ῥᾳδίαν καὶ βραχεῖαν ὁδὸν ἐπὶ τὴν εὐδαιμονίαν ἄξω σε. καὶ ἡ Ἀρετὴ εἶπεν· Ὦ τλῆμον, τί δὲ σὺ ἀγαθὸν ἔχεις; ἢ τί ἡδὺ οἶσθα, μηδὲν τούτων ἕνεκα πράττειν ἐθέλουσα; τίς ἄν σοι λεγούσῃ τι πιστεύσειε; Ἐγὼ δὲ σύνειμι μὲν θεοῖς, σύνειμι δὲ ἀνθρώποις τοῖς ἀγαθοῖς· ἔργον δὲ καλὸν οὔτε θεῖον οὔτε ἀνθρώπινον χωρὶς ἐμοῦ γίγνεται.

II Translate into Greek:—

Once the king of a certain large city in Africa, fearing that he would be conquered by his enemies, called together his chief men and thus spoke to them: "Never yet has any man against the

will of the king entered this city. In order that I may not endure this disgrace, I am resolved to burn my city and my house. You may yield to the enemy or flee; but I will perish in the flames." When they heard this, the chief men promised not to leave the brave king. So they all perished together in the flames of their city.

TUESDAY, 17TH DECEMBER, 10 A.M. TO 1 P.M.

LATIN: TEXT-BOOKS AND GRAMMAR.

I. Write down:—

1. the genitive and the accusative singular of—Simoïs, clamys, præpes, far.

2. the genitive plural of—bos, os (*bone*), sus, veru, remex, ilex.

3. the first person singular of the perfect tense indicative active, and also the supine, when it exists, of—detineo, effulgeo, promo, percello, consurgo, sino.

II. 1. Mark the difference in meaning between *plurimi* and *quam plurimi*; *nihil* and *nonnihil*; *quot* and *quotquot*; *uter* and *uterque*; *pedestris* and *pedalis*.

2. Form compound Latin words by prefixing *pro* to *salio*, *ex* to *frango*, *ex* to *quatio*, *in* to *ratus*, *in* to *pango*, *ad* to *cado*, *cum* to *tango*, *re* to *facio*, and when the compound word is a verb, give its principal parts.

III. 1. Express in English (*a*) ccxx naves? (*b*) noctis interventu; (*c*) sub corona vendere; (*d*) sub pellibus contineri; (*e*) pro loci natura; (*f*) obliquare sinus in ventum.

2. Conjugate in the present indicative—sibi persuasum habere.

IV. Express in Latin:—

1. On the 23rd day; 21 times; 93,000 men; will you go to the country? do not speak so; is she not ashamed?

2. Hannibal and Scipio were great military men, and it is not easy to say which of the two was greater than the other.

3. Euryalus won the first prize in the foot race: but it would have been won by Salius, had not Nisus made use of a stratagem in favor of Euryalus, his friend.

V. Translate into English, and account for the case of the words in italics:—

1. Hoc eo facilius magnam *partem* aestatis faciebant, quod nostræ naves tempestatibus detinebantur.

2. *Extremos* pudeat rediisse.

3. Nemo ex hoc numero *mihi* non donatus abibit.

4. Locus erat castrorum editus, paulatim ab imo acclivis, circiter *passus* mille

5. Cetera populea velatur fronde iuventus,
Nudatosque *humeros* oleo perfusa nitescit.

VI. Translate, and *parse fully* any italicized word:—

1. Udo sub robore vivit

Stuppa vomens tardum fumum, lentusque carinas
Est vapor.

2. Una omnes fecere pedem, pariterque sinistros,
Nunc dextros *solvere* sinus.

3. Omnibus in morem *tonsa* coma pressa corona.

4. Germanos, qui auxilio a Belgis *accersiti* dicebantur, si per vim navibus flumen transire conentur, prohibeat. What case is 'auxilio' and why?

VII. Re-write the following so as to substitute the *passive* construction for the active in 1 and 2; the *active* for the passive in 3 and 4:—

1. Multa Cæsarem ad id bellum incitabant.

2. P. Crassus præfectos tribunosque militares in finitimas civitates dimisit.

3. Utraque re oppidorum oppugnatio impediebatur.

4. Quo prœlio bellum Venetorum confectum est.

VIII. Answer the question appended to each of the following quotations:—

1. Ducat avo turmas . . . . . Substitute a proper noun for "avo."

2. Quem (equum) candida Dido
Esse sui dederat monumentum et pignus amoris.
Instead of *esse* a prose writer would have said what?

3. . . . . Nec litora longe
Fida reor fraterna Erycis.
Why are the *litora* called "fraterna"?

4. Et me sævus equis Oriens afflavit anhelis.
By whom and why is *Oriens* called *sævus?*

IX. Ast illum fidi æquales genua ægra trahentem,
Iactantemque utroque caput, crassumque cruorem
Ore eiectantem . . . . . .
Ducunt ad naves.

Translate and give the primitive form of any frequentative verb, and the frequentative form of any primitive verb in the above extract.

X. 1. What sort of men were the *Soldurii?*

2. Under what circumstances did Anchises appear to Æneas, and what instruction did he give him?

Tuesday, 17th December, 12 to 5 p.m.

LATIN: TRANSLATION.

I. Translate into English:—

1. Deiectis antennis, milites summâ vi transcendere in hostium naves contendebant. Quod postquam barbari fieri animadverterunt, expugnatis compluribus navibus, quum ei rei nullum reperiretur auxilium, fugâ salutem petere contendebant; ac iam conversis in eam partem navibus quo ventus ferebat, tanta subito malacia ac tranquillitas exstitit ut se ex loco movere non possent. Quæ quidem res ad negotium conficiendum maxime fuit opportuna; nam

singulas nostri consectati expugnaverunt, ut perpaucæ ex omni numero noctis interventu ad terram pervenerint, quum ab horâ fere quartâ usque ad solis occasum pugnaretur.

2. Equitum præfecti, ut erat imperatum, eductis quattuor cohortibus et longiore itinere circumductis, ne ex hostium castris conspici possent, omnium oculis mentibusque ad pugnam intentis, celeriter ad munitiones pervenerunt; atque his prorutis, prius in hostium castris constiterunt quam plane ab iis videri aut quid rei gereretur cognosci posset. Tum vero, clamore ab eâ parte audito, nostri redintegratis viribus, quod plerumque in spe victoriæ accidere consuevit, acrius impugnare cœperunt. Hostes undique circumventi, desperatis omnibus rebus, se per munitiones deiicere et fugâ salutem petere intenderunt.

3. Tum vero ingeminat clamor, cunctique sequentem
Instigant studiis, resonatque fragoribus æther.
Hi proprium decus et partum indignantur honorem
Ni teneant, vitamque volunt pro laude pacisci;
Hos successus alit: possunt quia posse videntur,
Et fors æquatis cepissent præmia rostris,
Ni palmas ponto tendens utrasque Cloanthus
Fudissetque preces divosque in vota vocasset:
Di, quibus imperium pelagi est, quorum æquora curro,
Vobis laetus ego hoc candentem in litore taurum
Constituam ante aras, voti reus, extaque salsos
Porriciam in fluctus et vina liquentia fundam.

4. Olli discurrere pares, atque agmina terni
Diductis solvere choris, rursusque vocati
Convertere vias infestaque tela tulere.
Inde alios ineunt cursus aliosque recursus
Adversi spatiis, alternosque orbibus orbis
Inpediunt, pugnaeque cient simulacra sub armis;
Et nunc terga fuga nudant, nunc spicula vertunt
Infensi, facta pariter nunc pace feruntur.
Ut quondam Creta fertur Labyrinthus in alta
Parietibus textum cæcis iter ancipitemque
Mille viis habuisse dolum, qua signa sequendi
Falleret indeprensus et inremeabilis error;
Haud alio Teucrum nati vestigia cursu
Inpediunt, texuntque fugas et prœlia ludo.

5. Talia dicta dabat, clavumque affixus et hærens
Nusquam amittebat, oculosque sub astra tenebat.
Ecce deus ramum Lethæo rore madentem
Viqae soporatam Stygia super utraque quassat
Tempora, cunctantique natantia lumina solvit.
Vix primos inopina quies laxaverat artus:
Et superincumbens cum puppis parte revolsa
Cumque gubernaculo liquidas proiecit in undas
Præcipitem ac socios nequicquam sæpe vocantem:
Ipse volans tenuis se sustulit ales ad auras.

(Not from text-books.)

6. Cæsar quum complures suos vulnerari videret, ex omnibus oppidi partibus cohortes montem ascendere et clamorem undique iubet tollere. Quo facto perterriti oppidani, quum quid ageretur in locis reliquis essent ignari, suspensi revocant ab impugnandis operibus armatos murisque disponunt. Ita nostri fine prœlii facto celeriter opera flamma comprehensa partim restinguunt, partim interscindunt.

II. Translate into Latin:—

On the next day all the chiefs came into Cæsar's camp to ask pardon for what they had done; but Cæsar detained them, and immediately led his soldiers to attack the enemy. Having conquered them he resolved to cross the Rhine. In ten days he built a bridge of boats across the river, and after ravaging the country of the Germans, returned to Gaul and thence to Rome.

TUESDAY, 17TH DECEMBER, 10 A.M TO 1 P.M.

ARABIC: TEXT-BOOKS AND GRAMMAR.

I. 1. Explain:—

لا تعجبك اثواب على رجل * دع عنك ملبسه وانظر الى الادب

فالعود لولم تفح منه روائحه * لم يحصل الفرق بين العود والحطب

2. Quote from your text-books five Arabic proverbs.

3. What are the social rights of the Muslims? Mention a few الكبائر *

II. Distinguish between:—

1. جاسوس وحاسوس - محموم ومهموم - اخوة واخوان - نسب وحسب - اخوة وخلّة *

2. فعل معتل و فعل صحيح - همزة وصل و همزة قطعي - لم و لما - لا و ما *

III. How do you form:—

1. Quadrilateral verbs (رباعي)

2. Feminines from adjectives and from substantives.

3 ماضيٌ مجهول - امر حاضر معروف - مضارع - اسم ظرف *

IV. Give:—1. the English of:—

عاهات - غبطة - منلة المائية - ركوة - دبيرة - ابيرة - مدلة تعليق الميمة - نكث الصفقة - شرب الدخان - اسم لا مسمي العرناء العرناء *

2. the واحد غائب ماضيٌ مطلق و مضارع معروف

امرواحد مخاطب معروف of اخشيشان - مشاركة - اقشعرار - تعظيم *

3. the خاصيات of the following forms of verbs:—

مفاعلة - استفعال - انفعال - فتح *

V. 1. Enumerate the * ضمائر منفصلة و متصلة

2. What is meant by رباعي - خماسي and ثلاثي ?

3. What is the وجه تسمية of مال and جدت ?

VI. Write down 1. the singulars of

دراري - روس - عدادل - ايمان - ارجل - جواري - تراجم - نساء

2. the plurals of دار - ليل - ذنب - غلام - ارض - أم - اب - عين

3. the اسماء خماسي المجرد - اسماء رباعي المجرد - اسماء ثلاثي المجرد of اوزان.

VII. 1. What is the limit of the number of letters that may compose a noun and a verb in Arabic?

2. When does the first letter of the aorist tense (مضارع) require a فتح ?

VIII. 1. How do you find out the gender of Arabic nouns?

2. When is the صيغة المجهول used and الهمزة الوصل omitted in Arabic?

TUESDAY, 17TH DECEMBER, 2 TO 5 P.M.

ARABIC: TRANSLATION.

I. Translate into Arabic:—

1. Prince Assad took the purse of money which Amgiad had in charge, and went forward towards the city. He had not gone far in the first street, before he met a reverend old man with a cane in his hand; he was neatly dressed, and the prince took him for a man of note in the place and accosted him thus, "Pray, my lord, which is the way to the market place?" The old man looked on Assad smilingly and said: "Child! it is plain you are a stranger, or you would not have asked that question of me." "Yes, my lord, I am a stranger," replied Assad. The old man answered, "You are welcome then; tell me what business you have at the market-place."

2. (*a*) What o'clock is it? (*b*) Have you sealed your letter? (*c*) What is the amount of that bill? (*d*) This pen is too soft. (*e*) You speak slowly. (*f*) If you have nothing to do, come with me to the beach. (*g*) Permit me to go home. (*h*) Put out the candle.

II. Translate into English:—

1 س - يا سيدي كيف اصبحت اليوم - ج - مع الخير والسلامة

بحمد الله تعالى - س - كيف حالك - ج - مزا جُدا طيّب ادعولك - س - اين نَدهبُ - ج - للقاء شفيقي المنشي ظهور الحسن - س - لقاء الاح ليس يفيد شيأ * سوى الهذيان من قيل و قال * فلا تصحب من الانسان الا * لاَجل العلم او اصلاح حال * ج - نعم صحيح - س - اليوم طلبتُ المولوي محمد زبيرخان ان يعلّمني الاسم الاعظم واعطاني طبقا معطّى ان اوصله الى فلان فقير في المسجد فأخذته فلما وصلت في الطريق فتحتهُ لانظر ايش فيه فغارت منه نارةٌ فرجعتُ و انا غضبان فلما رآني تبسّم و قال لا تغضب يا خائن واعلم انك اذا لم نستطع ان نكون امينا علي فارةٍ فكيف نكونُ امينا علي الادعية و الاسم الاعظم *

2 ولمّا فرغ المعلّمُ من المقال - اعترضَ عليه الطبيب و قال - كنتَ الحق بما اتيتَ - و موّهتَ القول فيما ادّعيتَ - و اخطأتَ في ترجيح علم النجوم - و تفضيله على سائر العلوم - و معلوم انّ موضوع علم الطب هو البدن الانساني - المتعلق به الروح الحيواني - المرتبطة به النفس الانسانية التي هي اشرف من النجوم و السموات - بل من جميع المخلوقات و المكونات - شعر -

دواؤك فيك و ما تشعر * و داؤك منك و ما تبصر

و بالجملة الانسانُ خليفة الرحمن - و النفس كالسلطان - و الاعضاء كالبلدان - و الحواس كالاعوان - و القوى و الاذهان - كالعمّال و الخزّان - و الجوارحُ و الاركانُ - كالخدّام و الغلمان - و بقاءُ سلطنة هذا الملك بصلاح رعيته - و استقرارُ ملكه بانتظام امور مملكته - بالصحة تنتظم امرُ عالم الاجسام - و بالمرض تختلّ هذا النسقُ و النظامُ - و العلمُ المتكفّل لحصول هذا الغرض -

علمُ الطبِ الباحث عن احوال بدن الانسان من حيث الصحة والمرض - لحفظ الصحة الحاصلة - واسترداد الزائلة - وكفي له شرفًا حديثُ "العلمُ علمانِ - علم الابدان وعلم الاديان" *

3 (١) من هوساكن هناك (٢) كل اناء يترشح بما فيه (٣) ساعتك تمشي طيب (٤) تقدر تتكلم بالانگليزي (٥) لابدّ انك تروح معي (٦) لايش تضحك بلا سبب (٧) كم من فصل في هذا الكتاب (٨) هل انت صاحب هذه الدار *

TUESDAY, 17TH DECEMBER, 10 A.M. TO 1 P.M.

PERSIAN: TEXT-BOOKS AND GRAMMAR.

I Paraphrase:—

(١) چو باد صبا زان زمین سیر کرد * نه سیری که بادش رسیدی نگرد
(٢) برو تا ز خوانت نصیبی دهند * که فرزند کانت سختی دراند
(٣) شهنشه بر آشفت کاینک وزیر * تعلل میندیش و حجت مگیر
(٤) بران مرد کند است دندان یوز * که مالد زبان بر پیرش دوروز
(٥) نصیحت شنو مردم نیک بین * نپاشد درو هیچ دل نخم کین
(٦) نترسد که نعمت بمسکین دهد * وزان بار غم بر دل این نهد
(٧) نه کشور کشایم نه فرماندهم * یکی از گدایان این در گهم
(٨) صفائیست در آب و آئینه نیز * ولیکن صفا را نباید تمیز
(٩) یکی دست گیرم بچندین درم * که چند ست تا من بزندان درم

1. Explain fully باد صبا in (١) and فرزند کانت in (٢). Mention the various kinds of باد and the properties of each. 2. Criticise or justify the use of the word شهنشه in (٣). 3. Give and explain the various readings of (٤) and (٥). 4. Point out the مشار الیه of این and آن in (٦) and the عیب قافیه, if any, in (٨). 5. According to the 8th couplet, which is the more transparent آب or آئینه and why? 6. Analyse (٩).

II. 1 By whom, and why, was Sa'adi called "the nightingale of a thousand songs"? How are ابو الفرج بن جوزی and شهاب الدین

connected with Sa'adi's education? Name three works that have been written in imitation of the *Gulistan*. Did Sa'adi go to Mecca at any time with شيخ عبد القادر جيلاني? Give reasons for your answer.

2. Why is عمل بادشاهان compared to سفر دريا? What is it which is said to be the هنر نديمان and عيب حكيمان, and why? To what five classes of people is travelling advantageous, and in what respect?

III. Write down:—

1. The English meanings of—

حالوت - زي - مستكبر - سلحشور - استقصا - قلم بر اسم كسے كشيدن - دود دل - سر كردن - سر خويش گرفتن - دست بر لب گرفتن - گردن بدوش فرو بردن - ابن السبيل *

2. The etymology of—

قزا گند - جلاب - مستور - خويشاوند - آبگينه - ه ثمعدد *

3. The purport of the advice of خسرو to شيرويه and of هرمز to كسرى.

4. The morals of the following stories:—

(۱) حكايت دزدان عرب (۲) حكايت تونگر سفله و درويش (۳) حكايت دختر حاتم (۴) حكايت پدر بخيل و فرزند لاأبالي *

IV 1. Give the meanings of تا and كه in the following:—

(۱) تا مرد سخن نگفته باشد * عيب و هنرش نهفته باشد (۲) تا درشتي هنر نپنداري (۳) نميرتا نرهي اي حسود كين رنجيست (۴) با طبع ملولت چه كند دل كه بسازد (۵) بترسد كه دو رانش بندي كند * كه بر بندیان زور مندي كند (۶) كسے جان ز آسيب دشمن ببرد * كه هر دوستان را بدشمن شمرد (۷) ملك اميد زندگاني قطع كرده بود كه سوارے از در در آمد و بشارت داد (۸) كرم كن نه برخاش و كين آوري * كه عالم بزير نگين آوري *

2. Explain the allusions in:—

(۱) چه حاجت كه نه كرسى آسمان * نهى زير پاے قزل ارسلان (۲) چو بهمن بزا بلستان خواست شد * چپ آواره افكند و بر راست شد (۳) اگر بر بيان كند بهرام گورے * نه چون پاے ملخ باشد رهورے

3. Supply the ellipses in:—

(۱) شب چو عقد نماز بر بندم * چه خورد با مداد فرزندم
(۲) راست خواهي هزار چشم چنان * کور بهتر که آفتاب سیاه
(۳) به بخشید آن قوم و دیگر عطا * که هرگز نکرد اصل و گوهر خطا

V. Write short notes on any *five* of the following:—

اصحاب کهف - آرد شیرها بکان - شیخ شمس الدین - فریدون - ملک صالح - قارون - زال - الپ ارسلان - نوح - یحیی *

VI. 1. Explain the واو in خوردن and نمودن; the الف in اندودن and آوردن; the ه in زره and زنگ; and the final ي in دانائي - قبله گاهي - کسے - دیدني - رهی - سعدي *

2. When is the ها ي مختفي omitted, and when is it changed to گ? Give examples.

3. What kinds of compound terms (مرکبات) are the following:— صاحبدل - ملک پیرایه - هیچمدان - کس مخوان *

VII. 1. Quote from the *Gulistan*, (*a*) a couplet whose metre is فاعلاتن repeated eight times; (*b*) a strophe (قطعه) the parport of which is:—

مرا ے درویشی دلق پوشي کافي نیست بلکه توحید و عمل صالح باید *

2. Complete the couplet or couplets beginning with—

(*a*) چه خوش گفت فردوسی پاکزاد
(*b*) چه خوش گفت آن تهیدست سلحشور

3. Quote a well-known تاریخ of the death of Sa'adi.

VIII. Give:—

1. the various meanings of مگر - بلکه - از and ین.

2. examples of—

(۱) زوائد جمله (۲) ضمیر متصل مرفوع و منصوب و مجرور (۳) اضافت بیاني - اضافت تشبیهي - اضافت استعاره (۴) مجاز مرسل - استعاره - تجنیس *

IX. Write in idiomatic Persian any *one* of the following stories:—

حکایت درویش با روباه - حکایت شبلي - حکایت زاهد مهمان - حکایت ابوهریره *

TUESDAY, 17TH DECEMBER, 2 TO 5 P.M.

PERSIAN: TRANSLATION.

I. Translate into Persian:—

1. A Chinese emperor was told that his enemies had raised an insurrection against him in one of his distant provinces. "Come, then, my friends," said he, "follow me, and I promise you that I will quickly destroy them." He marched against his rebellious subjects, but they submitted on his approach. All now expected that he would take the most signal revenge upon them. Instead of doing so, however, the captives were treated with mildness and humanity. "How!" exclaimed his chief minister, "is this the way that you fulfil your promise? You gave your royal word that your enemies should be destroyed; and, behold, you have pardoned them all, and even bestowed favours upon some of them." "I promised," replied the king, with a generous air, "to destroy my enemies, and I have kept my word; for, see, they are enemies no longer; I have made friends of them." Like this emperor let us learn to overcome evil with good, and destroy our enemies by changing them into friends by kindness.

2. (*a*) He nods approval. (*b*) This pipe does not draw. (*c*) He is a very methodical man. (*d*) That partridge does not come within shot. (*e*) He boxed my ears.

II. Translate into English:—

1 (۱) الهی را دیدم سمین و خلعتي ثمین در بر و سرکب
ناري در زیر و قصبی مصري بر سر - کسي گفت سعدي چگونه
همي بیني این دیباي معلم ترین حیوان لا یعلم - گفتم -

قطعه

بآدمي نتوان گفت ماند این حیوان * مگر دراعه و دستار و نقش بیرونش
نگرد در همه اسباب ملک و هستي او * که هیچ چیز نه بیني حلال جز خونش

(۲) پسر گفت اي پدر قول حکما را چگونه مخالفت کنم که
گفته اند رزق اگرچه مقسوم است باسباب حصول آن تعلق شرط
است - و بلا اگرچه مقدر است از ابواب دخول آن حذر کردن
واجب -

قطعه

رزق هرچند بیگمان برسد * شرط عقل است جستن از درها
ورچه کس بے اجل نخواهد مرد * تو مرو در دهان اژدرها

درین صورت که منم با پیل دمان بزنم و با شیر ژیان پنجه
در افکنم - پس مصلحت آنست اي پدر که سفر کنم که ازین بیش
طاقت بینوائي ندارم *

2 بزارید وقتي زبي پیش شوي * که دیگر سخرنان زبقال کوي
بازار گندم فروشان گراي * که این جو فروش است وگندم نماي
نه از مشتري کز زحام مگس * نه یکهفته رویش ندید است کس
دلداري آن مرد صاحب نیاز * بزن گفت کاي روشنائي بساز
نامید ما کلبه اینجا گر فت * نه مردی بود نفع زو وا گرفت
ره نیک مردان آزاده گیر * چو استادهٔ دست افداده گیر
نه بخشاي کانانکه مرد حق اند * خر یدار دکان بے رونق اند
جوانمرد اگر راست خواهي ولي است * کرم بیشهٔ شاه مردان علي است

3 (۱) او سنگین حرف میزند (۲) قلقلي مکن (۳) زبانت را خود گیر که امروز قدری سردماغ ام (۴) او خیلي کولي گیري میکند (۵) حرف توي حرف من میار (۶) بمطلب من خوب برمیخورید (۷) اسب او جفته مي اندازد (۸) اجزای سفارت ایران بملک معرفي شدند *

4 تغافل کردنت بے فتنهٔ نیست
فریب مرغ باشد خواب صیاد
دل که با خوبان بد خو آشنائي میکند
شیشهٔ با خارهٔ زور آزمائي میکند
چه بلاست از دو چشمت نظری بناز کردن
مژه را کشاده دادن در فتنه باز کردن
نمیگردد میسر تاجداری بے دلیریها
چو شمع از سر گذشتن لازم آمد سرفرازي را

TUESDAY, 17TH DECEMBER, 10 A.M. TO 1 P.M.

URDU: TEXT-BOOKS AND GRAMMAR.

I. اشعار مرقوم الذیل کي شرح کیجئے :—

(۱) ایک دل نہین آرزو سے خالي
ترجا ہي محال اگر خلا ہي

(۲) وحشي ہون نہ تصویر بھي لے راہ بیابان
مانی سے کہو پاؤن نہ بنانا نہین اچھا

(۳) حسن عارضی عارضي تها کهل گیا
خط کے آتے ہي لفافہ کهل گیا
(۴) جس سے طوفان نے کیا تها ظهور
انکے نانا کے گهر کا تها وہ تنور
(۵) وہ ہي خالي تو یہہ خالي وہ بهرے تو یہہ بهرے
کاسۂ عمر عدو حلقۂ آغوش ہوا
(۶) سرمہ ہي سفاک شهرہ هی نگاہ یار کا
سچ کہا ہی باز کاٹے نام ہو تلوار کا
(۷) قریب روي روشن طوق منت کے نرالے ہین
خدا کي شان ہی اک چاند پر دو تین ہالے ہین
(۸) چمن کو آبرو بخشي هی کیا قطرات شبنم نے
گلے مین سرو کے نام خدا موتي کے مالے هین

1 دوسري بیت کي ترکیب کیجئے *
2 اخیر چار بیت مین کیا صنائع لفظي و معنوي هین ؟
3 چوتهي بیت کي تلمیح کي تشریح کیجئے *

1 II. کیا سبب هی کہ آبي پرندون کے بدن پاني مین نہین بهیگتے ؟
2 کونسے پرند سو برس تک جیتے هین ؟
3 کوے گدهہ وغیرہ شهرون کے نزدیک رهنے کے فائدے اور نقصانات کیا هین ؟
4 شهر کالپي کہان هی اور وہان کونسی چیزین ملتی هین ؟
5 کسنے آگرہ کو اپنا تخت گاہ مقرر کیا اور کون وہان قلعہ تعمیر کیا ؟
6 سیکري کے تعمیرات کا مختصر حال لکهئے *

1 III الفاظ ذیل کے معنی انگریزي مین لکهئے :—
چوگان گاہ - گلبهرا - بسکهپرا - کهچوا - بنوار - دائد - سماجت - زرغباً - تسخیر مربع - مبادا - علی بدالقیاس - موالید ثلاثہ - تونسا - بزازہ - صرافہ - تربیتي *
2 مرقوم الذیل الفاظ کے جوڑے اور اضداد مرقوم هون :—
زمین - آفتاب - روز - جنت - آدم - غم - شیرین - خیر *

3 محاورات اور ضرب الامثال ذیل کي تشریح کیجئے :—
(۱) آج کد هر چاند نکلا (۲) آٹے مین نمک (۳) اپنی ڈہائي چاول الگ گلانا (۴) اپني سي بہت کرلي (۵) آستین کا سانپ (۶) آج کسکا منہہ دیکھا هی (۷) آدہا تیتر آدہا بٹیر (۸) آپ هي ناک چوٹي گرفتار هین *

1 IV. اسیر - امانت - میر اور ناسخ کا تذکرہ موافق نقشۂ ذیل کے رقم هو *

نام	مولد یا مسکن	مدفن	سن ولادت	سن وفات	تصنیفات

2 کتب مرقومۃ الذیل کے مصنف کون تھے ؟
شجرۂ معرفت - گلدستۂ شجاعت - کنز الاسرار - نالۂ درد - گلشن تعشق - مثنوي بے نظیر و بدر منیر - تاریخ دستنبو - تف آتشین - قاطع برهان *

1 V. اشعار مرقومۃ الذیل کن کے طبع زاد هین ؟
(۱) آدمیت اور شی هی علم هی کچھہ اور چیز
کتنا طوطی کو پڑھا یا پھر وہ حیوان هي رها
(۲) نوجواني مین توبہ کرلو خدائي کو مرید
ورنہ پیري مین کہان پھر یہ کرامات کے دن
(۳) زاهد شراب پینے سے کافر هوا مین کیون
کیا دیر چلو پاني مین ایمان نہ گیا
(۴) نہین خضاب سے مطلب همین یہ موی سفید
سیاہ پوش هوے ماتم جواني مین
(۵) کیا پوچھتا هی تو عمل بغض و محبت
چلتا هوا تعویذ سمجھہ نقش درم کو

2 ان اشخاص سے کسي ایک کا قصہ نثر مین رقم هو :—
ضحاک تازي . فریدون - جمشید - زردشت آتش پرست *

VI. 1 اس رقعہ مین کیا صنعت ہی ؟
شفیق والا تخت معلا تخت سلمہ - شیخ محمد بخش سوداگر
ختلي مال چیني اگر بیچین کل چیزین لوٹیپ لکھدو - جب دام
ملی تب مال لو فقط *

2 چمدستان عجیب سے ایک قطعہ لکھو جس کا مضمون یہ ہو:—
,, مشکل ملا یمت و نرمي سے آسان ہوتي ہی ,,

3 عبارت ذیل کو بجاے خطوط الفاظ مناسب و مربوط
داخل کرکے لکھئے :—
تعلیم اطفال خرد —— مین —— ہوتی ہي میا بجان گیارا
—— کا —— مگر —— الف بے —— بھي —— بھوا ——
لکھنا ہون اگر عزیز —— کو یہان —— تو اپنی بھائیون کے ——
خود —— مین پڑ —— کرے *

VII. 1 ماضي تمنائي - امر تعظیمي - امر مدامي - ماضي بعید -
حال - مصدر - اسم مفعول - فعل مستقبل قریب الوقوع - جمع
سالم کسطرح بنائی جاتے ہین ؟

2 امر و نہی - معروف و مثبت - مصدر اور حاصل مصدر
مین کیا فرق ہی ؟

3 کونسے افعال متعدي بالواسطہ ہو سکینگے اور کونسے
مجہول ؟ کونسا فعل ہی جسکو مفعول نہین آتا ؟ کونسے افعال
مین تذکیر و تانیث یکسان ہین ؟

4 کہان فعل محذوف رہتا ہی اور کہان تابع فاعل کے
اور کہان تابع مفعول کے ؟

VIII. تعریف کرو اور مثال بھي دو :—
فعل مجہول - اسم منسوب - تفضیل کل - فعل غیر صحیح - استفہام
انکاري - اسم تصغیر - مرکب ناقص - ہای مختفي - فعل تام -
تحذیر - ظرف مبہم - عطف بیان *

TUESDAY, 17TH DECEMBER, 2 TO 5 P.M.

URDU TRANSLATION AND COMPOSITION.

I. Translate into Urdu :—

1. We had one dangerous place to pass, where, our guide told us,

there were any more wolves in the country, we should find them; and this was in a small plain, surrounded with woods on every side, and a long, narrow defile or lane, which we were to pass to get through the wood, and then we should come to the village where we were to lodge. It was within half an hour of sunset when we entered the first wood, and a little after sunset when we came into the plain. We met with nothing in the first wood, except that, in a little plain within the wood, we saw five great wolves cross the road, full speed one after another, as if they had been in chase of some prey, and had it in view; they took no notice of us, and were gone and out of our sight in a few moments.

2. The habit of punctuality is most easily formed in youth. It is not to be gained by accident, nor by fits and starts, but by steady effort. Once acquired, it enables us to act easily and pleasantly. To be always in the right place at the right time; to be in school before the opening exercises begin; to be in time for our business engagements, are all excellent habits to form.

3. The men were very much surprised to hear this account of the affairs.

4. Scarcely had Sebaktigin ascended the throne, when Jeipal advanced with an army against him.

II. Translate into English:—

1 ایک آدمي مجھے بلا کر ملکہ کے حضور لیگیا - مجھے گھائل دیکھکر ایک جراح کو بلوائي - اور نہایت تقید سے فرمائي کہ اس جوان کو جلد چنگا کرکے غسل شفا کا دے - یہی تیرا مجرا ہی - اسکی اوپر جتني محنت توکریگا ویسا ہي انعام اور سرفرازي پاویگا - غرض وہ جراح بموجب ارشاد ملکہ کے کوشش کرکے ایک چلے مین نہلا دھلا کر مجھے حضور مین لیگیا - ملکہ پوچھي کہ اب تو کچھ کسر باقي نہین رہي ؟ مین کہا کہ آپکي توجہ سے ہٹا کٹا ہون - تب ملکہ ایک خلعت اور بہت سے روپی جو فرمائي تھي بلکہ اُس سے بھي دوچند عطا کي اور رخصت کي *

قلعہ بھی اسکا سنگ سرخ کا اِس مضبوطي و خوش اسلوبي کے ساتھہ بنا ہی کہ معمار قضا و قدر کی زبان اسکی اوصاف مین لال دھی - پھر ساخت تو اُسکي سي امر محال - علاوہ اسکے مکانات قسم قسم کے متعدد پاکیزہ خاصے - اور باغ بھي اسکے گلشن جہان کے خلاصے - نہرین جا بجا - حوض ہر ایک مکان مین کٹورہ سا بھرا ہوا - جدھر دیکھئے کیفیت نئي نظر آئے -

جس طرف نگاہ پڑے وہین رہجائے - اگر رضوان وہان کي بہار دیکھتا تو روضۂ رضوان کي دربانی سے ہاتھہ اٹھاتا *

2 ای شہنشاہ آسمان اورنگ * ای جہاندار آفتاب آثار
نہا مین اک بینواے گوشہ گزین * تہا مین اک درد مند سینہ فگار
تم نے مجھکو جو آبرو بخشي * ہوي میري وہ گرمیٔ بازار
کہ ہوا مجھہ سا ذرۂ ناچیز * رو شناس ثوابت و سیار
گرچہ از روی ننگ بے ہنري * ہون مین اپنی نظر مین اِنقا خوار
کہ گر اپنی کو مین کہون خاکی * جانتا ہون کہ آئے خاک کو عار
شاد ہون لیک اپنی جیمین کہ ہون * بادشہ کا غلام کار گزار
خانہ زاد و مرید اور مداح * تہا ہمیشہ سے یہ عریضہ نگار
بارے نوکر بھي ہو گیا صد شکر * نسبتین ہو گئین مشخص چار
نہ کہون آپ سے تو کس سے کہون * مدعای ضروري الاظہار
پیرو مرشد اگرچہ مجھکو نہین * شوق آرایش سر و دستار
کچھہ تو جاڑے مین چاہئے آخر * تا نہ دے باد زمہریر آزار
کیوں نہ درکار ہو مجھے پوشش * جسم رکھتا ہوں ہی اگرچہ نزار

مہربان دوستان سلمہ الرحمان -

یہ چاہتا ہی شوق کہ قاصد بجاے مہر
آنکھہ اپني ہو لفافۂ خط پر لگی ہوي

آپ کا خط مشعر روانگیٔ برخوردار پاچھامیاں سمت بنگلور صادر ہوا - مجھا جاے تعجب ہی کہ نور چشم مذکور نے باوجود تمہاري فہمایش کے کربت غربت اختیار کي - مین نے دیوان صاحب کے نام ایک خط لکھدیا ہی کہ اگر ممکن ہو تو اسکو سمجھا کر میرے پاس بھیجدین - وإلا کسي علاقے پر نامزد کرا کے اپني ہي پاس رکھین فقط *

III. Write an essay in Urdu on "*Mountains and their uses.*"

پہاڑون کا بیان اور انکی فوائد بزبان اردو تحریر کیجئے :—

TUESDAY, 17TH DECEMBER, 10 A.M. TO 1 P.M.

MARATHI: TEXT-BOOKS AND GRAMMAR.

I 1. मोरोपंताचें चरित्राविषयीं तुम्हांस काय कळेल? संग्रहांने लिहा. त्यांनी केलेल्या ग्रंथांचे नाम लिहा.

2. ब्रम्होत्तरखंड कोणता ग्रंथाचा भाग? तोग्रंथ कोणीं केला?

II खालीं लिहिलेल्या श्लोकांचा अर्थ स्पष्टपणें लिहा.

1. वत्सा शाश्वत होय श्रुतितज्ञपुराणकथित जो धर्म।
तो सेव्य उभयलोकीं प्राणी तेणेंचि पावतो शर्म॥

2. बा कोप लोभ शठता असदाग्रह पिशुनता कुटिलभाव।
उद्वेग दंभ यत्नें सोडीं जोडीं महाजनीं ठाव॥

3 हो द्वेषी पाखंडीं साधुजनीं हो सराग तूं बा गा।
दुर्मंत्रीं केवलजडपिशुनोक्तीं बधिर हो महाभागा॥

4. या सुनायाच्या सदनीं मातेसह बहुतकाल मी वसतों।
प्रेमरसचि अधिक असे न असा बहुमत बुधा सुधारस तों॥

5 त्या नृपजन्मीं भूमि ब्राह्मणमुख्यांस जी दिलीहोती।
झाली सिद्ध कपाटप्रोद्घाटनपटुतरी किली होती॥

III 1. अध्यात्म. 2. सेंक. 3. हातनय. 4. आश्वासन. 5. प्राप्तविद्य. 6 दैवज्ञ. 7 विदेश. 8. मगधकटक. 9. करवाल. 10. झळकणें. 11. थांग. 12. द्विषदर्णव. 13. बाहणें. 14. प्रसू. 15. झडपणें. 16. दडपणें. 17. सांनिध्य. 18. भैक्षभुक्. 19. स्त्रीरत्न. 20. खवळणें. 21. ह्या पदांचा अर्थ लिहा.

IV. मज्जया, हाचवर, आर्याही, शिवल्याला, तोलावी, आर्यावृत्ताचा यमकभागांत आलेल्या ह्या पदांचा दोन अर्थ लिहून त्यांतील पदांस छेदकरून लिहा.

V. खालीं लिहिलेल्या वाक्यांचा अर्थ लिहा.

1. पुरुषार्थांचें साधन बाध नसें हें शरीर रक्षावें ॥
2 वधयोग्य हि अरि येतां शरण तयातें वधूंनको जाण ॥
3 बह्वर्थ जनमनोहर स्वल्पाक्षर मधुर सत्य बोलावें ॥
4. जोवि चकोरखगातें पूर्णशरत्कालचंद्रमा उदित ॥
5 मूर्तस्वभाग्यदर्शन जाणों सुकृतें पुराकृतें घडलें ॥
6 श्रीगुरुशासनलंघन करणें अपराध सर्वथा खोटा ॥
7 परमाग प्रणताचा मी प्रभु पूर्वाग करिन चरमाग ॥

ह्यांत 1, 5, 6, 7 वचनें कोण कोणांस सांगीतला?

VI सद्गुरुकृतोपदेश, रत्नकनकमंडनमंडित, अश्वगजरथारूढ, दारुणरोगग्रस्त. ह्या समस्त पदांचा विग्रह सांगा.

VII. नायक विप्रांचा जो शौनक त्या कठिण सूत आयकवी. राया प्रेम असोंदे. व्याघ्र वृक व्यालांला पाहुनि भ्याली. परि ती सुमति म्हणे बा. वरिलवाक्यांत खालीं रेखांकित झालेल्या पदांस शब्दलक्षण (parsing) सांगा.

VIII. चुंबक, मानस, जांबूनद, चिंतामणि, हीं काय? त्यांची शक्ति कोणती?

IX. मादर, सज्जन, महर्षि, अब्धि, बह्वर्थ, मनोहर, उद्धरण, ह्या पदांतील सधींस लक्षण सहित दाखवा.

X. सख्य, मूढ, तेजस्वी, कुटुंबी, जनक, दुहिता, सेंक, बैसणें, ह्या पदांची व्युत्पत्ति अथवा प्रकृति सांगा.

XI. 1. बागोबहार द्वितीय भागाची कथास संक्षेपानें दोनि पृष्ठांत लिहा.

2. त्या कथांनून काय नीति अम्हास कळत आहे.

XII. क्रियापदांत ईल, एल या प्रत्ययांचा भेद काय? उदाहरणसहित लिहा. भाविप्रयोग, भावकर्तरिप्रयोग, प्रयोजकभेद म्हणजे काय? उदाहरणसहित लिहा.

TUESDAY, 17TH DECEMBER, 2 TO 5 P.M.

MARATHI: TRANSLATION AND COMPOSITION.

I. Translate into Marathi:—[See Urdu Translation Paper, page xxxii.]

II. खालीं लिहिलेल्या वाक्यांस इंग्रेजींत तर्जुमा करा.

1. (a) चंद्रांगदनरपतिची पत्नी सीमंतिनी तिची कन्या ।
जी पिंगलाभिधाना झाली ती कीर्तिमालिनी धन्या ॥

(b) भद्रायु राजनंदन वाढे वैश्येश्वराचिया गेहीं ।
सितपक्षीं चंद्र जसा सद्गुणगणही तयाचिया देहीं ॥

(c) भद्रायुचा सखा जो वैश्याधिपपुत्र सुनयनामा तो ।
तद्रूपमधु म्हणे मज सेवुनि रंभादिसुनयना मातो ॥

(d) भद्रायु सुनय दोघे वैश्यवराचे बहिश्चरप्राण ।
राजस्त्री धात्री बहु करि तेंव्हां योग्य तत्परित्राण॥

(e) ते रत्नकनकमंडनमंडित दोघे कुमार नवसाचे ।
जों जों वाढति तों तों वैश्यपतिमनीं प्रमोद नव सांचे ॥

(f) विनयान्वित गुरुसेवासादर विद्या कळा सुखें शिकले ।
पिक लेखिले सकलगुण सत्कविनीं आम्रवृक्ष ते पिकले॥

2. सार्वभौम राजाधिराज आपली स्तुति मीं गरीब स्त्रीनें काय करावी? आपण कृपाकरून माझी झोपडी पावन करणार हें ऐकून मला मोठा आनंद झाला आहे. आपली पायधूळ माझ्यासारख्याच्या घराला लागणें हें खरोखरच आश्चर्य आहे. आपल्यासारख्यांचें आगमन होणें हें त्या प्रांताचें घरांचें आणि विशेषकरून त्यांत वासकरणाराचें विलक्षण भाग्य समजलें पाहीजे. अशा उत्तम लाभाची संधि मला प्राप्ति झाली यापेक्षां परमेश्वरानें मजवर कृपा ती कोणती करावी? असो ईश्वर आपलें सदोदित कल्याण करो.

III Write an essay in Marathi on "*Mountains and their uses.*" "पर्वत व त्यांचा उपयोग" ह्याविषयीं मराठींत एक निबंध लिहा.

TUESDAY, 17TH DECEMBER, 10 A.M. TO 1 P.M.

TAMIL: TEXT-BOOKS AND GRAMMAR.

I. 1. நீங்கள் படித்த செய்யுள்கள் ஒவ்வொன்றையும் செய்தவர் யார் யார்?

2 நீதிநெறிவிளக்கம் செய்தவரால் இயற்றப்பட்ட மற்ற நூல்களுள் இரண்டு நூல்களின் பெயர் தெரிவிக்க.

3. இராமாயணம், அரிச்சந்திர புராணம இவை எந்த எந்த வருஷத்தில் அரங்கேற்றப்பட்டன?

II. 1. அடுத்தொன றிரந்தார்ககொன் றீந்தாரைக் கொண்டார்
படுத்தேழை யாமென்று போகினும் போக
அடுத்தற லெம்பாலா யாவர்க்கே யானுங்
கொடுத்தேழை யாயினரில்.

2. தம்மின் மெலியாரை நோக்கித் தமதுடைமை
அம்மா பெரிதென் றகமகிழ்க—தம்மினுங்

கற்றாரை நோக்கிக் கருத்தழிக கற்றதெல்லா
மெற்றே யிவர்க்குநா மென்று.

3. என்னனைய மூனிவரரு மிமையவரு
மிடையூ றொன்றுடைய ராலுல்
பன்னகமு நகுவெள்ளிப் பனிவரையும்
பாற்கடலும் பதும பீடத்
தந்நகருங் கற்பகநாட் டணிநகரு
மணிமாட வயோத்தி யென்னும்
பொன்னகரு மல்லாது புகலுண்டோ
விகல் கடந்த புலவு வேலோய்.

4. அன்பிலா ரெல்லாந் தமக்குரிய ரன்புடையா
ரென்பு முரியர் பிறர்க்கு.

இவற்றுள் முதற்பாட்டிற்குப் பதவுரையும் மற்ற மூன்று பாட்டிற்கும் பொழிப்புரையும் எழுதுக.

III. 1. II - ம் கேள்வியிலுள்ள முதற் பாட்டிற்குக் கருத்துரை எழுதுக.

2. இரண்டாவது பாட்டில் சொல்லும் நற்குணங்களுக்கு மாறுபாடான துற்குணங்கள் எவை ?

3. மூன்றாவது பாட்டு யார் யாருக்குச் சொன்னது ? அதின் கருத்தை யொரு வரியில் தெரிவிக்க.

4. நாலாவது பாட்டுக்குத் திருஷ்டாந்தமாக யாருடைய கதையைச் சொல்லுலாம் ?

IV. முதற் பாட்டில்—

1. 'ஈந்தாரை' என்பது எதைக்கொண்டு முடிகிறது ?

2 'அடுத்தறல்' இத்தொடரில் என்ன விகாரம் ?

3. 'ஐந்து பால்', 'ஐம்பால்' ஆனதற்கு நன்னூற் சூத்திரம் கூறுக.

V. இரண்டாவது பாட்டில்—

1. 'மகிழ்க' என்பதற்கு எழுவாய் என்ன ?

2. 'தம்மின்' இதிலுள்ள வேற்றுமை யுருபுக்குப் பொருள் யாது ?

3. 'எற்றே', 'என்று' இவை யென்ன சொற்கள் ?

4 'அம்மா பெரிது' என்ற இயல்புப் புணர்ச்சிக்குச் சூத்திரம் எப்படி ?

VI. மூன்றாவது பாட்டில்—

1. 'என்னனைய', 'பதுமபீடம்' இவையென்னதொடர் ?

2 'அல்லாது','கடந்த'இவற்றின்பகுபதமுடிவுஎப்படி ?

3. 'பல் - நகம', பன்னகம்' ஆனதற்கு நன்னூற் சூத்திரம் என்ன ?

VII. 1. 'அம்பலந் தாழ்க்கூட்டுவோர்.' யார் ?.

2. 'பிறராற் பெருஞ்சுட்டு வேண்டுவான் யாண்டு மறவாமே நோற்ப தொன்றுண்டு.' அது யாது?

3. 'தந்தை மகற் காற்று நன்றி' யும், 'மகன்றந்தைக் காற்று முதவி' யும் என்ன என்ன?

4. 'வினையிலே கிடந்தேனை' என்ற திருவாசகத்தையோ, 'யாவையு மெவருந்தானாய்,' என்ற திருவாய்மொழியையோ, 'இரும்பைக் காந்தம்' என்ற தாயுமானவர் பாடலையோ யாதேனும் ஒன்றை எழுதுக.

VIII. கீழ் வருவனவற்றிற்குப் பொருள் சொல்லுக:—

1. (a) குடிஞை யிரட்டுங் குளிர்வரை. (b) இலைமுகப் பைம்பூணிறை. (c) கன்னே ரனைய மனக்கடையாய். (d) புலனைந்திற்குஞ் சொலப்படான். (e) கல்லிற் பசிய நாருரித்து. (f) ஆக்களும் அஜங்களும் அமிதமாய்ப்பரவலாயின.

2. (a) கபோதகம் (b) பிலம் (c) சோகாப்பர் (d) சதாஸ்து (e) உயங்கி (f) சவி (g) உறல் (h) உரல் (i) உறழ் (j) உலரல் (k) உழலல் (l) உளறல்.

IX. 'சித்திரம் பேசும் மாயப்பெண்களும் இந்திரஜாலம் கற்ற அசரீரிகளும் மனதினாலொன்றை யெண்ணி வாக்கினாலொன்றைப் பேசி விரகறியா மாந்தர்க்கு ஆசைகொளுத்தி நாசம் வருத்தும் இயற்கை யுள்ளன. மாயப்பெண் வாக்கை மெய்யென்று எண்ணி உய்ய வகையற்று உலகம் பழிக்க எதிர்ந்தோர் மகிழத் திக்கற்றவனாயினேன். அபத்தம் சொல்லும் அவைகளின் இருபொருள் கிளவியை இனி ஒருகாலும் எவரும் நம்பி ஏமாறு திருக்கக்கடவர்.'

1. கீழ்க்கோடு இட்ட சொற்களுக்குத் தக்க பிரதிபதங்கள் எழுதுக.

2. மேலெழுதியிருக்கும் வாக்கியங்கள் யார் எக்காலத்தில் சொன்னவை? 'இரு பொருள் கிளவிகள்' எவை?

3. உள்ளன - இதன் பகுதியடியாற் பிறந்த ஐம்பால் மூவிடத்திற்கும் பொதுவான வினைமுற்றென்ன?

ஆயினேன் - இதன் பகுதியடியாற் பிறந்த பிறவினை இறந்தகாலப் பெண்பால் படர்க்கை வினைமுற்று என்ன?

X. 1. டங்கன், 2. மக்டப், 3. கான்ஸ்தன்ஸ், 4. பெர்தினாந்து இவர்கள் யார் யார் என்று மும்மூன்று வரிக்குமேற்போகாமல் எழுதுக. இவற்றுள் 'டங்கன்', 'மக்டப்', இவை தமிழ் மொழிகள் அல்லவென்று இலக்கணவிதியால் எப்படி நிரூபிக்கலாம்.

TUESDAY, 17TH DECEMBER, 2 TO 5 P.M.

TAMIL: TRANSLATION AND COMPOSITION.

I. Translate into Tamil:—[See Urdu Translation Paper, page xxxii.]

II. Translate into English:—

1. நாடி நமனென்று நன்குபுறந் தந்தாளைக்
கேடு பிறரொடு சூழ்தல் கிளர்மணி
நீடுகல் வெற்ப நினைப்பின்றித் தாமிருந்த
கோடு குறைத்து விடல்.

2. மெய்வருத்தம் பாரார் பசிநோக்கார் கண்டுஞ்சார்
எவ்வெவர் தீமையு மேற்கொள்ளார்—செவ்வி
அருமையும் பாரா ரவமதிப்புங் கொள்ளார்
கருமமே கண்ணாயினார்.

3. இனிய வுளவாக வினனாத கூறல்
கனியிருப்பக் காய்கவர்ந்தற்று.

4. நல்லா றெனினுங் கொளறீது மேலுலக
மில்லெனினு மீதலே நன்று.

5. இவ்வரசன என்ன, சாமானியனா? சத்துருக்களை அச்சுறுத்திக் கீழ்ப்படுத்தும் அற்புதமான ஆண்மையுள்ளவன்; தன் நிலத்தில் வாழும் குடிகளின் உயிரையும் உடைமைகளையும் தன உயிரெனவும் உடைமைகளெனவும் பாவித்துப் பாதுகாக்கும் மாட்சிமையுள்ளவன்; குலத்திலுங் குணத்திலுஞ் சிறந்த பட்டவர்த்தனர் முதலிய பிரபுக்களைப பக்ஷமாய் அணைத்து அனபு பாராட்டுபவன்; எனக்கு மிக்க மரியாதைசெய்பவன்; அருளுக்கு இருப்பிடம்; அறத்திற்கு வேலி; சிறியோர் பெரியோர் அனைவரும் புகழுங் குணநிதி; இத்தகைமையுள்ள ராஜோத்தமர்களுக்கு கடவுள் முக்கியமாய்த் துணைநிற்பார். அன்றியும், கெடுமதி குடிகொள்ளும் வஞ்ச நெஞ்சுள்ள படுபாதகன் எவனாவது இவ்வகை அரசனை வதைசெய்தால், அந்த ராஜத்துரோகியைத் தப்பவொட்டாமல்பழிதீர்க்கப்பிரஜைகளகங்கணங்கட்டி நிற்பார்கள்.

6. அற்பவிஷயத்தில் சித்தி காட்டியது உம்மை இறங்காத்துறையில் இறக்கிப் படுகுழியில் வீழ்த்தவாம்.

7. அவனை ஏற இறங்கப் பார்த்தான்.

8. அவன் கண்ணுங் கண்ணீருமாயிருந்தான்.

9. அரசின் நகரத்தைச் சேர்ந்ததுஞ் சேராததுமாயிருக்கையில்.

10. உழைப்பில்லான் பழிப்படைவான்.

III. Write an essay in Tamil on "*Mountains and their uses.*"

"மலைகளும் அவற்றின் உபயோகங்களும்"—இதைப்பற்றித் தமிழில் ஒரு வியாசம் (essay) எழுதுக.

TUESDAY, 17TH DECEMBER, 10 A.M. TO 1 P.M.

TELUGU: TEXT-BOOKS AND GRAMMAR.

I. 1. తిక్కన విరచితమయిన భారతములోని యాశ్వాసాంత గద్యలయందు "బుధారాధన విరాజి తిక్కన సోమయాజి ప్రణీతంబయిన" అనియున్నది. ఈ భాగము నిర్వచనోత్తర రామాయణమునందలి గద్యములో నెట్లున్నది? అట్లుండుటకుఁ గారణమేమి?

2. తిక్కన యే కాలమునం దున్నవాఁడు? అతనితో నమకాలికుఁడయిన కవి నొక్కనిఁ బేర్కొనుఁడు.

3. హరిశ్చంద్రోపాఖ్యాన మేపురాణముననుండి తెనిఁగింపఁబడినది? వేణీసంహారమాళవికాగ్నిమిత్రనాటకములను సంస్కృతమున రచియించినవా రెవ్వరు? వేణీసంహార మనుపే రీనాటకమున కేల వచ్చినది?

II. ఈ క్రిందిపద్యములకు మాఱుపదములతో దండాన్వయము వ్రాయుఁడు.

1. దనుజేంద్రుండు మరుద్గతిం జని సముద్రస్నానసంజాతశు
ద్ధినితాంతానులచిత్త నిశ్చలసమాధివ్యంజితానందమీ
లనసంభావితలోచనుం గపికులశ్లాఘాత్ము నవ్వాసవిం
గని తన్మూర్తినివృత్తవిక్రమకళాకౌతూహలస్ఫూర్తియై.

2. రవియుదయంబుకంటె మునురాజశిఖామణి మేలుకాంచె దా
నవకులమర్దనాంకసురనాదము లైనసురంగగీతముల్
వివిధగతిప్రవర్తననవీనములై సాగయింప మాగధ
ప్రవరులు పాడుమంజుమృదుభంగికి వీనులు దొల్త మేల్కనన్

3. కనియె న్భూతలనాథుఁ డాటవికరాకాచంద్రబింబాననా
జననిత్యోచితపుండరీకగవయస్తంబేరమాఖేటముల్
ఘనశృంగాటము నర్మదోర్మిపటలీగర్జద్దిశాపేటముల్
వినుతానేకనికుంజకూటము మహావింధ్యాటవీవాటముల్.

III. 1. పరివారము నిలుపఁబడ, వీరులనఁ గొంద అస్మహి వినఁగఁబడిరి—ఈ రెండుచోట్లనుగల 'పడు' ధాతురూపముల కర్థభేదమేమి?

2. కమలాసనవినునా విక్రమముకు, వీపుపయి మోపుగాఁ బెట్టతనిన్, మఱచియున్నయెడను గొనిదినములకున్, నీల్దట్టీలు, ముయ్యేడు

మూర్ఛనలను.—ఇందు క్రింద గీఁతలు గలచోట్ల నున్న వ్యాకరణాది విశేషములేవేవి?

3. ఎయ్యెడ నిలుచుట యెఱుఁగము ఇయ్యెడ నే డీవు విడియుము—ఇక్కడ సంధి రాకుండుటకు గతియేమో చెప్పి, మీయుత్తరమునకు ఉపబలముగా నిర్వచనోత్తర రామాయణమునుండి మఱియొక ప్రయోగమును గనుపఱుచునది.

4. ఏపున నేనువచ్చుటయు—ఇక్కడయువర్ణ మేయర్థమునవచ్చినదో చెప్పి, మఱి యేయే యర్థములయందుఁగూడ వచ్చునో వివరించునది.

IV. 1. ప్రతిపత్తి, కర్బురము, వల్లరి, నిదిధ్యాసనము, ఒనపరి, గాణలు, చెంబళ్లు, దోహదము—వీని యర్థములను వ్రాయుఁడు.

2. లత్తుక, చిత్తరువు, బీరము, ఉగ్గడించు, ధాడి, ఏకతము, ఉవిద, అరదము.—వీని ప్రకృతులు దెలుపుఁడు.

3. రాక, అనయము, కరము, సేన.—ఈ పదములకు తత్సమములయినప్పుడును దేశ్యములయినప్పుడును ఏమేమి యర్థము?

V. 1. సప్తోపాయధురీణత। సప్తవ్యసనములు వదలి సదమలబుద్ధిన్। సప్తాంగరక్షణుండై—ఇందుఁ జెప్పఁబడిన సప్తోపాయములను, సప్తవ్యసనములను, సప్తాంగములను, వివరింపుఁడు.

2. (a) తారకకార్తికేయుల విధంబున; (b) అమ్మురాచ్యుతుల కైవడి; (c) త్రిశంకభూవరు.....బొందితోడనే యనుపఁడె దేవతాపురికి.—వీనియందలి కథలను సంగ్రహముగా వ్రాయుఁడు.

3. వేణీసంహారమున ధర్మరాజుతో కపటసన్యాసి చెప్పిన మాయమాటలును, వానిని నమ్మి యాతఁడేమిచేసినదియు, వివరింపుఁడు.

4. పరివ్రాజిక యైనపండితకౌశికికథవలన మాళవికాగ్నిమిత్రము రచియింపఁబడినకాలములో నీదేశమునందు ఏమతము ప్రబలముగా నున్నట్లు చెప్పవచ్చునో కారణముతోడఁ దెల్పుఁడు.

VI. 1. ద్రౌపది—ఇది యేవృత్తి? వృత్తియనఁగా నేమి? వృత్తులేవి? వానికుదాహరణములు వ్రాయుఁడు.

2. దరహాసచంద్రిక—ఇది యేసమాసము? సమాసమనఁగా నేమి? సమాసము లెన్ని విధములు?

3. ఈశ్వరుఁడొకరినికతక్క—ఇందు మొదటిపదమునకు ప్రథమ యెట్లువచ్చినది ?

4. తోడ, వలన—ఈ విభక్తు లేయే యర్థములయందు వచ్చును ?

5. క్త్వార్థకము, తుమున్నాద్యర్థకము—వీనికి రూపములు ఎట్లు ఏర్పడునో వ్రాసి, వాని యుపయోగములన్నియుఁ దెలియునట్లుగా నొక్కొక్క యుదాహరణ మిండు.

6. కలయంగ్రుమ్మరిపొడ్డునుంజెమట—ఇచట "పొడ్డు" అను రూపము సాధువా ? సాధారణముగా నెట్టిపదముల కిట్టిరూపములుండును ?

VII. 1. అల్లదెనదాగతి నట్లల్లహరిదైత్యిరిపుభల్లమకుట ప్రసవవల్లరినము ద్యత్—దీని గణవిభజనముచేసి, ఈవృత్తముపేరును, సామాన్యములయిన వృత్తములకును దీనికిని గలభేదమును, వివరింపుఁడు.

2. పద్యములు వృత్తములుగా, జాతులుగా, ఉపజాతులుగా, ఉండునుగదా—వానికిఁ గలపరస్పరభేదమేమి ?

3. (a) హేమసమాప్తి నుద్ధితరథోత్తమ... (b) నృపులకునీతిగాదు ధరణీశ్వర...—ఈ రెండుపాదములలో యతిస్థానములను జూపునది.

VIII. విశ్వామిత్రుఁడు కల్పించిన మాయామృగవర్ణనమునుగాని, కాశీకాశ్రమవర్ణనమునుగాని, పుస్తకములోనున్నట్లుసంగ్రహముగా వ్రాయుఁడు.

TUESDAY, 17TH DECEMBER, 2 TO 5 P.M.

TELUGU: TRANSLATION AND COMPOSITION.

I. Translate into Telugu :—[See Urdu Translation Paper, page xxxii.]

II. Translate into English :—

1. ఆల మొనర్పఁగా వలయునప్పుడు వహ్ని నుపాస్తి చేసి యా వేలిమి నొక్కతేరు ప్రభవించిన గ్రక్కున దాని నెక్కి దోర్లీల వెలుంగ నేగిన నరిప్రకరంబులచేత నెమ్మెయిన్ గాలవశంబు నొందక యఖండితవిక్రమశాలి నయ్యెదన్.

2. మలయజశైత్యయుక్తములు మానసము ల్విలయోష్ణభానుమం డలకిరణాతితీక్ష్ణములు నాలుక లెప్పుడు మానికోటికిం దలఁప ననుగ్రహించినఁ బితామహుఁ జేయుదు రల్పునైనఁ బే రలుకపహించిరేని కడునల్పునిఁ జేయుదు రప్పితామహున్.

3. అప్పుడు దుర్యోధనుఁడు తనసైన్యమునకెల్ల భీష్ముని నాయకునిఁగా నేర్పఱిచికొనెను. ఆయన మొనగాఁడై నిలిచి తనసేనను వెనుదీయనీయక పదిదినములు ప్రతిసైన్యముల దైన్యంబును బొందించుచుఁ జండభండనంబు సలిపి యవుల సురపతిసుతునిశరంబులమ్మరమునకుఁ దాళఁజాలక నిలువఁబడెను. అంత సుయోధనుఁడు ఛిన్నభుజునిమాడ్కిం జేయునది లేక కొంతతడవు చింతించి కురుసేనలకు గురుని మొనగానిఁ గావించె. ఆయన తనసేర్పు మెఱయ పెక్కువ్యూహములఁ బన్ని పగతురలోపలఁ జొరనీక తనదండునకు నండయై నిలిచి యరాతి వీరులబీరం బణఁప సాగెను.

4. ఒకరాజు మిడుతంభట్లు అనుసెకజోస్యునికి సెలజీతము ఏర్పఱిచి నిత్యము తనసభకు వచ్చుచుండ వలసినదనియు, అవసరమున్నప్పుడు జోస్య మడుగుడుననియు, సెలవిచ్చెను. అతఁడు మీక్కిలి సంతోషించి యింటికి పోయెను. ఇంతలో రాజాజ్ఞచేత నతని బసకు భోజన సామగ్రి సమృద్ధిగా వచ్చి చేరినది. తత్పూర్వము ఇల్లంతయు నాక్రమించుకొని యున్నదారిద్ర్యము ఎక్కడికిఁబోయెనో పోయినది. మధ్యాహ్నభోజనము తృప్తిగాఁ గానిచ్చి, చక్కగా నిద్రించి లేవఁగానె, భార్య ఆయనను "ఏ యుపాయముచేత రాజకృపను సంపాదించితివి?" అని యడిగెను. "జోస్యుఁడ నని బొంకితి" నని యతఁడుచెప్పెను. 'ఈదినానికి నీతల నిలిచినది. రేపు నీబొంకు బయలుపడునుగదా, రే పెట్లు బ్రదుకుదువు" అనియడిగెను. "నాకష్టములో నేను ఈదినపు మాట ఆలోచించితి నేగాని రేపటిమాట ఆలోచింపలేదు" అనెను.

5. (a) నీడను కోరినవాఁడు కొమ్మలపఱపుచేత నలుదిక్కుల నల్లుకొన్నమ్రాను కాలిపోయినపిమ్మట దానివేరు మొలకయెత్తునని యెదురు చూచుచున్నట్లు. (b) నామనస్సు.....ఎండకాయుచు, వానకురియుచునుండునప్పటి తామరదళయందున్నది. (c) స్వాధీనుఁడైనపిమ్మట శత్రువును సంకటపఱుపఁగూడదు.

III. Write an essay in Telugu on "*Mountains and their uses.*"

"పర్వతములును, వానివలని ప్రయోజనములును"—దీనిగుఱించి తెలుఁగుభాషలో ఒక యుపన్యాసము వ్రాయుఁడు.

TUESDAY, 17TH DECEMBER, 10 A.M. TO 1 P.M.

KANARESE: TEXT-BOOKS AND GRAMMAR.

I. 1. ಕನ್ನಡ ಭಾರತವನ್ನು ಬರೆದ ಕವಿಯು ಸಂಸ್ಕೃತ ಭಾರತದ ಎಷ್ಟು ಪರ್ವಗಳನ್ನು ಕನ್ನಡಿಸಿದನು? ನೀವು ಈ ಪರೀಕ್ಷೆಗಾಗಿ ಓದಿದ ಅಂಶವು ಎಷ್ಟನೇ ಪರ್ವದಲ್ಲಿ ಇದೆ?

2. ಆತನು ದೊಡ್ಡ ಮತದವನೆಂದು ಊಹಿಸುವದಕ್ಕೆ ನಿಮಗೆ ಕಾರಣಗಳೇನಾದರೂ ತೋರಿದರೆ ಹೇಳಿರಿ.

II. 1. ಕೆಳಗಣ ಪದ್ಯಕ್ಕೆ ದಂಡಾನ್ವಯವನ್ನು ಬರೆಯಿರಿ.

ಉಕ್ಕಿ ವಿಸಟಂಬರಿವ ಹರುಷದ
ತೆಕ್ಕೆಯಲಿ ಕೈಗೊಡುವ ನೃಪತಿಗ
ಳಕ್ಕಲಿಸಿ ಹೊರವಂಟನರಸನು ಸಕಲ ದಳ ಸಹಿತ
ಮಿಕ್ಕು ಬರೆ ಬರೆ ಕೃಷ್ಣನನು ಕಂ
ಡೊಕ್ಕನೊಡಲನು ಚರಣದಲಿ ಸಾ
ಕಕ್ಕಜವಿದೇನೆನುತ ನೆಗಹಿದನಂದು ಧರ್ಮಜನ.

2. ಸ್ವಸ್ತಿ ಸಮಸ್ತಸಾಮಂತರಿಪುಚಕ್ರಮಕುಟತಟಘಟಿತಮಾಣಿಕ್ಯರತ್ನಪ್ರಭಾನಿರಾಜಿತಪಾದಪೀಠರಾದ ಪ್ರತಾಪಾನಲಪ್ರದ್ಯೋತಿತಪೃಥ್ವೀಮಂಡಲರಾದ ಕುಶಲಮತಿಯುತ ಕುಶಲಾವತಿಯ ಕುಲಶೇಖರಸಾರ್ವಭೌಮಸುಕುಮಾರಯುವರಾಜ ಚಂಡಪರಾಕ್ರಮಿಗಳಿಗೆ.

ಇದಕ್ಕೆ ಪ್ರತಿಪದಾರ್ಥವನ್ನು ಹೇಳಿರಿ.

III. 1. ದ್ವಾರಕಾಪುರವನ್ನು ಕುರಿತು ಅರ್ಜುನನು ಮಾಡಿದ ಹೊಗಳಿಕೆಯ ಮಾತುಗಳು ಎರಡು ಪದ್ಯಗಳಲ್ಲಿ ಕೊಟ್ಟಿರುತ್ತವೆಯಷ್ಟೆ - ಆ ಪದ್ಯಗಳ ಅಭಿಪ್ರಾಯವನ್ನು ಎಂಟು ಸಣ್ಣ ವಾಕ್ಯಗಳಾಗಿ ಸುಲಭ ಶೈಲಿಯಿಂದ ಬರೆಯಿರಿ.

2. "ಕೋಮಟಿಗನು ವಿನಾಯಕನನ್ನು ಮೋಸ ಮಾಡಿದ ಕಥೆ"- ಈ ಕಥೆಯಲ್ಲಿ ಕೋಮಟಿಗನು ಮಾಡಿದ ಹರಿಕೆಯೇನು? ಆ ಹರಿಕೆಯನ್ನ ಹ್ಯಾಗೆ ತೀರಿಸಿದನು?

3. (a) "ಮಕ್ಕಳಿಲ್ಲದವರಿಗೆ ಗತಿ ಇಲ್ಲ." ಹೀಗೆಂದು ದೇವದಾಸಿಯು ಹೇಳಿದ್ದಕ್ಕೆ ಆಕೆಯ ಗಂಡನು ಕೊಟ್ಟ ಉತ್ತರವೇನು? ಇಲ್ಲಿ "ಗತಿ" ಎಂಬದರ ಅರ್ಥವೇನು? (b) "ಹಿಂದೆ ಮಕ್ಕಳನ್ನು ಹೆತ್ತು, ದಶರಥ

"ಮುಂತಾದವರು ಬಹಳ ದುಃಖ ಪಟ್ಟದ್ದು ನೀನು ಕೇಳಿ ಅರಿಯಾ ?" ದಶರಥ ಮುಂತಾದವರು ಅಂದರೆ ಯಾರ್ಯಾರು ? ಪುರಾಣ ಪ್ರಸಿದ್ಧರಾದ ಇಬ್ಬರನ್ನು ಕುರಿತು ಹೇಳಿದರೆ ಸಾಕು.

IV. 1. ಅಗಧರನು, ನದೀಸುತನು, ಪನ್ನಗನ ಶಿರಿಮಂಚದಾತನು-ಇವುಗಳು ಯಾರ್ಯಾರ ಹೆಸರುಗಳು ? ಈ ಹೆಸರುಗಳ ಅವಯವಾರ್ಥದಿಂದ ಸೂಚಿತವಾಗುವ ಪೂರ್ವಕಥೆಗಳು ಯಾವವು ?

2. "ತಮ್ಮ ಜನನವ ನೋಡಿ ನುಡಿದರು ಪಾಂಡು ಸುತರಲ್ಲೆಂದು ಹೇಳೆಂದಾ." ಇದರಲ್ಲಿ "ಜನನ" ವನ್ನು ಕುರಿತು ಸೂಚಿಸಿದ ಸಂಗತಿಗಳನ್ನು ವಿಶದೀಕರಿಸಿರಿ.

V. 1. ಕೆಳಗಣ ಉಪಮಾನಗಳಿಗೆ ಉಪಮೇಯ ಸಾಧಾರಣಧರ್ಮಗಳನ್ನು ಹೇಳಿರಿ. "ಪ್ರಳಯಕಾಲದ ಮುಕ್ಕಣ್ಣನಂತೆ." "ಬಿದಿಗೆಯ ಚಂದ್ರನಂತೆ." "ತಣ್ಣೀರ ಕೊಪ್ಪರಿಗೆಯಲ್ಲಿಟ್ಟ ತುಪ್ಪದಂತೆ." "ಸುರಗಿಯನು ಬಿಸುಟೊರೆಯನಂಗೀಕರಿಸಿದಂದದೆಲಿ."

2. ಬಿಟ್ಟಿರುವ ಪದಗಳನ್ನು ಸೇರಿಸಿರಿ.

"ಮಂತ್ರಾಲೋಚನೆಗೆ ——— ಲ್ಲಿ ಬೃಹಸ್ಪತಿಗೂ ——— ಲ್ಲಿ ಜನನಿಗೂ ಸಮಾನನಾದವರು ಬೇಕಾದ್ದರಿಂದ."

VI. 1. "ಜನಪನಪಕೀರ್ತ್ಯಂಗನೆಗೆ ತೊಡಿಸಿದನು ಭೂಷಣವಾ" ಆ "ಭೂಷಣವು" ಯಾವದು? ಅದನ್ನು ಕವಿಯು ಹ್ಯಾಗೆ ವರ್ಣಿಸಿರುತ್ತಾನೆ ? 2. ಸಂಹಿತ, ಪದ ಕ್ರಮ, ಜಟಿ, ಘನ - ಇವುಗಳ ಅರ್ಥವನ್ನು ಹೇಳಿ, ಇವುಗಳಿಗೆ ಇರುವ ವ್ಯತ್ಯಾಸವನ್ನು ತೋರಿಸಿರಿ. 3. "ಮರದ ಡೊಂಕು ಬೆಂಕಿ ತಿನ್ನುವದು." "ಆಸುರದ ಕತ್ತಲೆಯ ಬೀಡು ಮಹಾ ಸಹಾಯವು ಗೂಗೆಗಳಿಗೆ." ಈ ವಾಕ್ಯಗಳು ಯಾವಸಂದರ್ಭಗಳಲ್ಲಿ ಬಂದವೆ? ಅರ್ಥ ವಿವರಿಸಿರಿ. 4. "ಕಾದುವರಮನಮೂರುಕವಲಾಗೆ." "ಮೂರುಕವಲು" ಯಾವವು ? 5. "ಇವನು ಶುದ್ಧ ಬ್ರಹ್ಮನು" ಇಲ್ಲಿ "ಬ್ರಹ್ಮ" ಯೆಂಬದರ ಅರ್ಥವೇನು? ಆ ಅರ್ಥವು ಹ್ಯಾಗೆ ಬಂತು ? 6. "ಭ್ರಾಂತಿಯೋಗ" ಅಂದರೇನು ? 7. "ನಿಮ್ಮತಲೆಗೆ ಬೆಂತು" - ಇದರ ಅರ್ಥವೇನು ? 8. ಗಂಧರ್ವವಿವಾಹ, ಸ್ವಯಂವರ,ಇವುಗಳಿಗೆ ವ್ಯತ್ಯಾಸವೇನು ?

VII. 1. ಭಾಮಿನಿ ಷಟ್ಪದಿ ವೃತ್ತದಲ್ಲಿ ಪ್ರಯೋಗಿಸಲಿಕ್ಕಾಗದ ಮಾ

ತ್ರಾಗಣಗಳು ಎರಡು ಮಾತ್ರ ಇವೆ. ಅವುಗಳನ್ನು ಬರೆದು ತೋರಿಸಿರಿ.

2. ಕೆಳಗಣ ವೃತ್ತಾರ್ಧಕ್ಕೆ ಪ್ರಸ್ತಾರವನ್ನು ಬರೆದು, ಅದರಲ್ಲಿ ಛಂದೋದೋಷವಾಗಲಿ ಛಂದೋವಿಶೇಷವಾಗಲಿ ತೋರಿದರೆ ಹೇಳಿರಿ.

ಹದನನಾಪ್ತರಿಗರುಹಿದನು ಗು
ಪ್ತದಲಿ ಕೃಷ್ಣನಸೊಳಗು ಮಾಡುವ
ಮುದದಿ ಬಂದನು ಕೌರವೇಂದ್ರನು ದ್ವಾರಕಾಪುರಿಗೆ.

VIII. 1. ಯಾಯಿವಾರ, ಅಲಂಗ, ಮಂದಲಿಗೆ, ತುಳುವ, ಪೆಂಡೆ, ಹುಲಸು - ಇವುಗಳ ಅರ್ಥವೇನು ?

2. ಒಕ್ಕಣೆ, ಕಿಬ್ಬದಿ, ಪಾಗರ, ಮುಂಗಾರು, ಬೈರವಾಸ, ಮುಚ್ಚಂದಿ, ವೈಯಾಳಿ, ಬಿನ್ನವತ್ತಳೆ, ಉಂಬಳಿ, ಪಡಿಹಾರಿಕೆ, ಜಾಳಿಗೆ, ಗುಡಾರ- ಈ ಶಬ್ದಗಳ ವ್ಯುತ್ಪತ್ತಿಯನ್ನು ಕೊಟ್ಟು, ಅರ್ಥವನ್ನು ಹೇಳಿರಿ.

3. "ಹರಣ" ಯೆಂಬದಕ್ಕೆ ಎರಡು ಕಡೆಯಲ್ಲಿ ಬೇರೆ ಬೇರೆ ಅರ್ಥ ಬಂದದೆ - ಆ ಎರಡರ್ಥಗಳನ್ನೂ ಆ ಶಬ್ದದ ವ್ಯುತ್ಪತ್ತಿ ಸಹಿತ ಹೇಳಿರಿ.

4. "ನೆರಳು" ಯೆಂಬದರ ಇನ್ನೊಂದು ರೂಪ ಯಾವದು ?

IX. 1. "ಬಾಳು" ಯೆಂಬ ಧಾತುವಿಗೆ ಹಳೆಗನ್ನಡ ಕ್ರಿಯಾಮಾಲೆಯ ಪ್ರಕಾರ ನಿಷೇಧ ರೂಪಗಳನ್ನು ಬರೆಯಿರಿ.

2. ತಜ್ಜಾತಿದ್ವಿರ್ವಚನ, ಸತಿಸಪ್ತಮಿ, ವೀಪ್ಸಾಸಮಾಸ - ಅಂದರೇನು ? ಉದಾಹರಣಗಳನ್ನು ಕೊಡಿರಿ.

3. ಗೇಯು, ದಾಟು, ಮುರಿ, ತೆರು, ಹೊಳೆ, ಕೂಡು, ಮಿಗು, ಮುಳಿ - ಈ ಧಾತುಗಳಿಂದ ಹುಟ್ಟಿದ ನಾಮವಾಚಕ ಕೃದಂತಗಳನ್ನು ಬರೆಯಿರಿ.

TUESDAY, 17TH DECEMBER, 2 TO 5 P.M.

KANARESE: TRANSLATION AND COMPOSITION.

I. Translate into Kanarese:—[See Urdu Translation Paper, page xxxii.]

II. Translate into English:—

1. ನಾಡ ಬೇಡುವರೆಮ್ಮೊಡನೆ ಸೊಯಿ
ದಾಡುವದು ಸಂಪ್ರತಿಗೆ ಚಿತ್ತವ
ಮಾಡಲಾಗದು ಸಂಧಿ ವೀರಕ್ಷತ್ರಿಯರ ಮತವೇ
ಬೇಡುವರೆ ಪಾರ್ಥಿವರು ತಾವದ

ನಾಡಬಾರದು ತಮ್ಮ ಜನನವ
ನೋಡಿ ನುಡಿದರು ಸಾಂಡುಸುತರಲ್ಲೆಂದು ಹೇಳೆಂದಾ.

2. ನಾಡಿಗೋಸುಗ ಸೋದರರು ಹೊಯಿ
ಡಾಡಿ ಹರಿಹಂಚಾದರೆಂಬುದ
ನಾಡದಿಹುದೇ ಲೋಕ ಕಮಲಜನುಸುರಿಹನ್ನ ಬರಾ
ಬೇಡಕಟ ನಿಮ್ಮೊಳಗೆ ನೀವ್ಕೈ
ಗೂಡಿ ಬದುಕುವುದೊಳ್ಳಿತಾವ್ನೆ ರೆ
ನೋಡಿ ಸಂತಸಬಡುವೆವೆಂದನು ರುಕ್ಮಿಣೀರಮಣಾ.

3. ವಿಷವನಣುವೆಂದಳುಕದುಪಭೋ
ಗಿಸಲು ಕೊಲ್ಲದೆ ಬಿಡುವುದೇ ? ಕರ
ಗಸದ ನಡು ಬಡವಾದರೆಯು, ಕೊಯ್ದುಕ್ಕದೇ ತರುವಾ ?
ಶಕುವಿವನು, ಸಾಮರ್ಥ್ಯ ಪುರುಷನೆ ?
ಪುಸಿ, ಕಣಾ ! ಯೆಂದುಳುಹಿದೊಡೆ ರ
ಕ್ಕಸನಹನು ಮುಂದಕ್ಕೆ ತನಗವನೆಂದನಾ ಶಕುನೀ.

4. ಶೋಭಾವತಿ ಎಂಬ ಪಟ್ಟಣದಲ್ಲಿ ಸುಶೀಲನೆಂಬ ಬ್ರಾಹ್ಮಣನೂ ಪ್ರಾಜ್ಞಶಾಲಿ ಎಂಬ ವೈಶ್ಯನೂ ಇದ್ದರು. ಈ ಉಭಯತ್ರರು ಬಾಲ್ಯ ದಾರಭ್ಯ ಬಹಳ ಮೈತ್ರಿಯಿಂದ ಸಕಲ ಕಾರ್ಯಗಳಲ್ಲಿಯೂ ಒಬ್ಬರಿಗೊ ಬ್ಬರು ಸಹಯೋಗಕ್ಷೇಮಿಗಳಾಗಿ ಇದ್ದರು. ಆದರೆ ಆ ಬ್ರಾಹ್ಮಣನ ಯೋಗ್ಯತೆಯೆನ್ನೂ ವರ್ತಕನ ವ್ಯಾಪಾರದ ಕುಶಲತೆಯೆನ್ನೂ ಅಲ್ಲಿ ವಿ ಚಾರಿಸುವವರಿಲ್ಲದೆ, ಈ ಉಭಯತ್ರರು ಬಹಳ ದರಿದ್ರರಾಗಿ ಜೀವನಕ್ಕೆ ಮಾರ್ಗವಿಲ್ಲದೆ ಆಲೋಚನೆ ಮಾಡಿದರೇನಂದರೆ, "ನಾವು ಈ ಸ್ಥಳದಲ್ಲಿ ಎಷ್ಟು ದಿವಸವಿದ್ದರೂ, ನಮ್ಮ ಕಷ್ಟ ಪರಿಹಾರವಾಗಿ ಸೌಖ್ಯ ಉಂಟಾಗುವ ದಿಲ್ಲ. ಸಾಯಲಾರದ ಬಡತನಕ್ಕೆ ಪಲಾಯನವೇ ನಿಕ್ಷೇಪ ಎಂಬ ಗಾಧೆ ಯಂತೆ ದೇಶಾಂತರಕ್ಕೆ ಹೋಗಿ, ಪ್ರಬಲವಾದ ಆಶ್ರಯ ಮಾಡಿ, ಅದ ರಿಂದ ನಾವು ಮುಂದಕ್ಕೆ ಬರಬೇಕು. ನಮ್ಮ ಉಭಯತ್ರರಲ್ಲಿ ನನಗೆ ಕೂಡಿ ಬಂದರೆ, ನಾನು ನಿನಗೆ ಸಹಾಯ ಮಾಡಬೇಕು. ನಿನಗೆ ಕೂಡಿ ಬಂದು ನನಗೆ ಯಾವದೂ ಅನುಕೂಲಿಸದೇ ಹೋದರೆ, ನೀನು ನನಗೆ ಪಾಲು ಕೊಟ್ಟು, ಸಹಾಯ ಮಾಡಬೇಕು" ಎಂದು ನಿಶ್ಚಯ ಮಾಡಿಕೊಂಡು, ತಮ್ಮ ಸ್ಥಳವನ್ನು ಬಿಟ್ಟು, ದೂರ ದೇಶಕ್ಕೆ ಹೋದರು.

5. ಲೋಕ ಕರ್ತನಾದ ದೇವರು ಒಬ್ಬರನ್ನೂ ಕೊಡ ಯಾವಜ್ಜೀವವು ಏಕಪ್ರಕಾರವಾಗಿ ಇರಿಸುವದಿಲ್ಲ. ಇಲಿಯನ್ನು ಹುಲಿಯಾಗಿ ಮಾಡುವನು. ಹುಲಿಯನ್ನು ಇಲಿಯಾಗಿ ಮಾಡುವನು.

6. ನಡದು ಹೋದ ಮಾತಿಗೆ ನುಡಿದು ಫಲವಿಲ್ಲ.

7. ಈಗ ಆ ಕನ್ನಿಕೆಗೆ ಏಳು ತುಂಬಿ ಎಂಟನೇ ವರುಷವಾಗಿದೆ.

8. ಅತನು ನಮಗೆ ನಾಮಾ ಇಕ್ಕಿ, ಬ್ರಾಹ್ಮಣಕರ್ಮಗಳನ್ನೆಲ್ಲಾ ನೆರವೇರಿಸಿ,ಬಿಟ್ಟನು.

9. ಪಟ್ಟಕ್ಕೆ ಮಕ್ಕಳಾಗಲಿಲ್ಲ. ಮಕ್ಕಳಿಲ್ಲದ ರಾಜ್ಯ ಅನಾಯಕವಾಗಿ ಕಂಡವರ ಪಾಲಾಗುವದಿಲ್ಲವೇ ?

III. Write an essay in Kanarese on "*Mountains and their uses.*"

"ಪರ್ವತಗಳೂ, ಅವುಗಳ ಪ್ರಯೋಜನಗಳೂ." ಇದನ್ನು ಕುರಿತು ಕನ್ನಡ ಭಾಷೆಯಲ್ಲಿ ಒಂದು ಉಪನ್ಯಾಸವನ್ನು ಬರೆಯಿರಿ.

TUESDAY, 17TH DECEMBER, 10 A.M. TO 1 P.M.

MALAYALAM: TEXT-BOOK AND GRAMMAR.

1. 1. താഴെചേർത്ത ശ്ലോകത്തിൻെറ അർത്ഥം വ്യക്തമായിപറയുക :—"കർണ്ണാരുന്ദുദമന്തരേണരണിതം ഗാഹസ്വകാകസ്വയം। മാകന്ദംമകരന്ദശാലിനമിഹത്വാംമന്മഹേകോകിലം। രമ്യാണിസ്ഥലവൈഭവേനകതിചിദ്വസനികസരിതാം, നേപാലക്ഷിതിപാലഫാലമിളിതേ പങ്കേനശങ്കേതകം॥

2. താഴേചേർത്തപദ്യങ്ങളുടെ അർത്ഥം വിവരിച്ചു പറയുക :—

(a) ധർമ്മപരമാനസ നധർമ്മലവഹീനൻ
ധർമ്മതനയൻ വിമലകർമ്മഗതിശീലൻ
കർമ്മകരഭാവമൊടു കൃഷ്ണനെവണങ്ങി
നിർമ്മലമൊരർത്ഥ മുരചെയ്യുഹരശംഭൊ.

(b) ഓത്തില്ലാത്ത മഹീസുരനില്ല
കൂത്തില്ലാത്ത നടന്മാരില്ല

പോത്തില്ലാത്ത കൃഷിക്കാരില്ല
ചാത്തില്ലാത്ത ധനവ്യയമില്ല.

(c) വല്ലാമക്കളി ലില്ലാമക്കളി
തെല്ലാവക്കും സമ്മതമെല്ലൊ.

(d) ഉൾക്കടലൈയ്യ പയോധിഗഭീരൻ.

(e) തൃക്കണ്ണനകൾകൊണ്ടുവക്കാണിക്കുന്ന നേരം, മുക്കണ്ണൻതമ്പുരാൻെറ മുഷ്ക്കൊന്നുതാണുപോകും, ഇക്കണ്ടപൂരുഷൻമാർ നൈക്കുംഭമെന്നപോലെ, മൈക്കണ്ണിമാരൊനല്ല തീക്കട്ടപോലെയെന്നും ॥

(f) നിയ്യൊരുചെണ്ടക്കാരരിൽ മുമ്പൻ.

(g) നാലർക്കൂട്ടനേരമിത്ഥം വാലെട്ടപ്പാനുള്ള മാർഗ്ഗം.

(h) നമ്മുടെകൂട്ടക്കാരിൽചിലര
പ്പെണ്ണുമണിമാരോടു ചേച്ചുതുടങ്ങി

(i) താനുണ്ണാത്തൊരു തേവർവരത്തെ
ദ്ദാനംചെയ്യാ നാളായ്യരുമൊ

(j) കുടമണികൾകാഞ്ചീ മകുടമിവയെല്ലാം
ഉടലിലണിയുന്നോ നവനിപതിയാമൊ.

II. 1. മുകുന്ദൻ—യുധിഷ്ഠരൻ—തണ്ടാർമിഴി—പ്രഥമൻ ഓരം പദങ്ങളുടെ ധാത്വർത്ഥം പറയുക.

2. നിയതം നിവൃത്തിപദം നിദാനം
നിയതി പ്രശ്മഗുണരാശി മതികല
സായം ഭൂമിപുരന്ദരൻ ചൊല്ലുവിളി
ഉദ്യതൻ ശിവംകരൻ കാലീഫ്

ഓരം പദങ്ങളുടെ അർത്ഥം പറയുക.

III. 1. താഴെചേർത്ത പദ്യത്തിൽ സൂചിപ്പിച്ച കഥയെ ചുരുക്കത്തിലെഴുതുക :—

"ഒന്നൊരുകുൽട്ടൻ മററതുപാണ്ടൻ
നന്നായ്യരുമോ ദുരിതംചെയ്യാൽ."

2. താഴേചേർത്ത പദ്യങ്ങളുടെ കഥാസംബന്ധമെന്തെന്നും അവയെ ഏതേതിന്നുദാഹരണമായി പറഞ്ഞതാണെന്നും എഴുതുക :—

(a) "ഒരു വനസഹായൻ പെരുവഴിനടന്നാൽ
ഉരുതരമപായം വരുമവനശങ്കം."

(b) "മുല്ലപ്പൂമ്പൊടിയേററുകിടക്കും
കല്ലിന്നുമുണ്ടാമൊരു സൌരഭ്യം."

(c) "തളെളക്കിട്ടൊരു തല്ലുവരുമ്പോൾ
പിളെളയെടുത്തു തടുക്കേയുളളൂ."

IV. 1. ശിവൻകിരാതവേഷം ധരിച്ചപ്പോൾ ശിവചിഹ്നങ്ങൾ ഏന്തെല്ലാമായിട്ടാണു മാറിയത ?

2. അർജ്ജുനൻ യാദവസൈന്യമുപേക്ഷിച്ചു ശ്രീകൃഷ്ണനെ വരിച്ചതിന്നു അർജ്ജുനൻപറഞ്ഞ കാരണങ്ങളെന്തെല്ലാമാണ ?

V. സഞ്ജയൻെറദൂത, ധർമ്മപുത്രരുടെ ഉത്തരം, ശ്രീകൃഷ്ണൻെറസന്ദേശം, ഇവയുടെസാരം ചുരുക്കിപറയുക.

VI. 1. താഴെചേർത്ത പദ്യത്തിൽ കീഴരയുളള പദങ്ങളെ വ്യാകരിക്കുക. അവയിൽ വല്ല അബദ്ധവുമുണ്ടെങ്കിൽ അതെന്തെന്നും പറയുക :—

എന്തൊരുഫലമിഹകരുതിവരിച്ചു
പന്തനിരായുധനെന്നെയിദാനീം

2. താഴെചേർത്തവയിലെ സന്ധികളെ വിവരിക്കുക :—പടജ്ജനം—തരമല്ലരനെസ്സേവിക്കരുതു—നിന്തിരുവടിയുടെ—മൃദുഹസിതാഞ്ചിതം—പരദേതി.

3. താഴെചേർത്ത പദങ്ങളിലുളള അബദ്ധങ്ങളെ സൂക്ഷ്മമാക്കുക :—കിരാതം—ബണ്ടുവത—വെററ്ല—പട്ട—അറിയാത്തെന്ത്യ.

അവിടത്തില്ല—വൃഥാവിൽ—കപ്പഛേദം.

VII. താഴെചേർത്തവാചകങ്ങളെതെററുതിർത്തെഴുതുക: 1. ഒരം അരിഷ്ടം എനിക്ക പ്രാപ്തിയാവാൻ. 2. ധനം യാവത്തും എടുത്തു. 3. അവ (മതസ്യങ്ങൾ) ആക്കും യാതൊരുദോഷവും ചെയ്യയില്ല. 4. ഒടുക്കം ഞാൻ എന്നെ ഒരംശ്വരസങ്കലത്തിന്നഭരമേല്പിച്ചു. 5. ആ കൊടുങ്കാററുചിലദിവസങ്ങളോളംഅടിച്ചു. 6. കാട്ടാളന്മാരിൽ ആരെങ്കിലും കൊന്നുപോയെങ്കിൽ എല്ലാവരുംകൂടി നമ്മെ നശിപ്പിച്ചുകളയും. 7. നിങ്ങൾക്കു എൻെറ ആലോചനകേട്ടു നടപ്പാനാണ ഭാവമെങ്കിൽ. 8. മഹാവ്യസനകരമായ ഒരംനാടകത്തിൽ രണ്ടാമത്തെ നാടകൻ ഞാനാകയാൽ.

TUESDAY, 17TH DECEMBER, 2 TO 5 P.M.

MALAYALAM: TRANSLATION AND COMPOSITION.

I. Translate into Malayalam:—[See Urdu Translation Paper, page xxxii.]

II. Translate into English:—

1. "ആദ്വീപിൽ ജനങ്ങൾ വളരെ ഉണ്ടായിരുന്നതല്ലാതെസകലസാധനവുംസമൃദ്ധിയായുണ്ടായിരുന്നു. അതിലെ പ്രധാനപട്ടണം വലിയ ഒരു കച്ചവടനഗരംതന്നെ. എനിക്ക അകപ്പെട്ടിരുന്ന അത്യാപത്തിൻെറശേഷം സുഖകരമായ ഈ ദിക്കിൽചെന്നപാത്ത എനിക്കവളരെസന്തോഷമായിതൊന്നി. ഔദാര്യശീലനായ ആരാജാവ എന്നൊടകാണിച്ചപ്രീതിനിമിത്തം ആ സന്തോഷം പരിപൂർണ്ണമാകയുംചെയ്തു. എന്തിനു വളരെ പറയുന്നു, രാജാവിന എന്നോളം പ്രിയമുള്ളവരാരും അവിടെയില്ല. അതു ഹേതുവായിട്ട അരമനയിലാകട്ടെ നഗരത്തിലാകട്ടെ ഉള്ളവരൊക്കയും എൻെറ മതസമ്പാദിപ്പാൻ യത്നിച്ചുപൊന്നു. ആകയാൽ ഏറെകാലം കഴിയുംമുമ്പെ

ഞാൻ പരദേശിയാണെന്നുള്ള ഭാവംമാറി എല്ലാരും എന്നെ ആനാട്ടുകാരനെപ്പോലെ തന്നെ വിചാരിക്കയും ചെയ്തു.

2. ആ രാത്രിയിൽ ഞാൻ ആ വ്യാപാരികളോടു കൂടെ താമസിച്ചു, അവരുടെ കൂട്ടത്തിൽ എൻെറ ചരിത്രം കെട്ടിട്ടില്ലാത്തവക്ക കൊൾപ്പാൻവെണ്ടി ഞാൻ അതു രണ്ടാമതും പറഞ്ഞറിയിച്ചു. മുൻപറഞ്ഞ ആപത്തുകളിൽനിന്ന തെററി പ്പൊന്നതുകൊണ്ടുണ്ടായ സന്തോഷം അടക്കി വെപ്പാൻ എനിക്ക കഴിഞ്ഞില്ല. ഈ ഉണ്ടായ തൊക്കയും സ്വപ്നമത്രെ എന്നും ഞാൻ ആ ആപത്തിന്നിന്ന തെററിപ്പൊന്നിട്ടില്ലെന്നും എനിക്ക ഓരൊരിക്കൽ തൊന്നിപ്പോയി.

3. നാം എത്രതന്നെ ധനവാന്മാരായിരുന്നാലും നമ്മുടെ ധനത്തിനെ നല്ലവിഷയങ്ങളിൽ ചിലവുചെയ്യേണ്ടതാകുന്നു. ദുർവ്യയംചെയ്യുന്നത ആധനത്തിനെ വെറുതെകളയുന്നതിനെക്കാൾ കഷ്ടതരമാകുന്നു. ഉപയോഗമുള്ള യാതൊരു സാധനത്തെയും പാഴാക്കിക്കളയരുത. ധനത്തെയൊ അതുകൊണ്ടു വാങ്ങുന്ന എന്തെങ്കിലും പദാർത്ഥത്തെയൊ തുമ്പില്ലാതെകളയുന്നതിനെക്കാൾ സാധുക്കൾക്ക കൊടുക്കുന്നത എത്രഗുണമുള്ളതാകുന്നു.

4 ഒന്നുകിൽ യുക്തികൊണ്ട അല്ലെങ്കിൽ അനുഭവംകൊണ്ടനിൻെറ മനസ്സിൽ അതു നല്ലവണ്ണം പതിയണമെന്ന ഞാൻ അവനോടു പറഞ്ഞപ്പോൾ കുറെച്ചു ചിരിച്ചും കൊണ്ടു അതെനിക്കു മനസ്സിലാകുന്നില്ലെന്ന പറഞ്ഞു.

5. എൻെറ രാജ്യത്തിൽ കൂടിപൊകുന്ന സമയം നിന്നെ രക്ഷിക്കെണ്ടതിന ആവശ്യപ്പെട്ടതെല്ലാം

ഞാൻ ചെയ്യാമെന്നു രാജാവു പറഞ്ഞിട്ടുള്ളതു കൊണ്ടുനീഭയപ്പെടുവാൻ ആവശ്യമില്ല.

6. നാം ദൈവത്തിൻെറ കൈകാണുന്നില്ലെങ്കിലും അവൻ ഒരു അച്ഛൻ എന്നപൊലെ മനുഷ്യരെ പരിപാലിക്കുന്നത ലൊകത്തിലെല്ലാം കാണ്മാനുണ്ടു.

III. Write an essay in Malayalam on "*Mountains and their uses.*"

മലകളുടെയും, അവയെകൊണ്ടുള്ള ഉപയൊഗങ്ങളുടെയും, കുറിച്ചു മലയാളത്തിൽ ഒരുഗദ്യ പ്രബന്ധം എഴുതുക.

TUESDAY, 17TH DECEMBER, 10 A.M. TO 1 P.M.

URIYA: TEXT-BOOK AND GRAMMAR.

N.B. ବର୍ଣ୍ଣଶୁଦ୍ଧି ପ୍ରତି ଦୃଷ୍ଟି ରଖିବ ।

I. (କ) ହିତୋପଦେଶର ରଚୟିତା କିଏ? କି ଉଦ୍ଦେଶ୍ୟରେ ପୁଣି କେଉଁ କେଉଁ ଗ୍ରନ୍ଥମାନଙ୍କରୁ ଏହି ପୁସ୍ତକ ସଂଗୃହୀତ ହୋଇଅଛି?

(ଖ) ନିମ୍ନଲିଖିତ ବାକ୍ୟମାନଙ୍କର ବ୍ୟାଖ୍ୟା କରି ପ୍ରତ୍ୟେକ ବାକ୍ୟରେ କେଉଁ ନୀତି ସୂଚିତ ହେଉଅଛି ବ୍ୟକ୍ତ କର :—

1. ଶରତ୍କାଳୀନ ମେଘ ପରି ଗର୍ଜନ କରିବା ଉଚିତ ନୁହେଁ ।

2. କାପଟ୍ୟ ବଞ୍ଚିତ ଲୋକ ଯଥାର୍ଥରେ ମଧ୍ୟ ବିପଦ ଜ୍ଞାନ କରେ ।

3. ଏହା ଶୁଣି ସେ ବ୍ୟାଘ୍ର ଚିନ୍ତା କଲା, 'ଯାବତ୍କାଳ ଏ ମୁନି ବଞ୍ଚି ଥିବେ ତାବତ୍ ମୋହର ଅପଯଶଜନକ ଯୁଦ୍ଧ ନାମ ଯିବ ନାହିଁ ।

4. ରାବଣ ସୀତାଙ୍କୁ ହରଣ କରିବାରୁ ସମୁଦ୍ରର ବନ୍ଧନ ହେଲା ।

II. (କ) ନିମ୍ନଲିଖିତ ବାକ୍ୟମାନଙ୍କର ଅର୍ଥ ବିଶଦରୂପେ ବୁଝାଇଦିଅ :—

1. ଆମ୍ଭେ ସମ୍ପ୍ରତି ଅନାଥା ହୋଇଅଛୁଁ । ହା ! କି ପରିତାପର ବିଷୟ, ଆମ୍ଭେ ଏଥି ପୂର୍ବରେ ରାଜସ୍ୱତ୍ତ ଅବସ୍ଥାରେ ବିଭୁଭିଦ୍ୱାରା ପରମୈଶ୍ୱର୍ଯ୍ୟଶାଳିନୀ ଅଳକା ପୁରୀକୁ ସୁଖ ପରିଭବ କରି ଅଛୁଁ ।

2. ସଚେତନ ଅସ୍ତ୍ରଗଣ ଜଗତ୍ପ୍ରଭୁଙ୍କର ପାର୍ଶ୍ୱରେ ଜୟଧ୍ୱନି କରୁ ଅଛନ୍ତି ଏବଂ ତତ୍ପ୍ରଭାବରେ ଖଗରାଜ ନାଗରାଜଙ୍କ ସହିତରେ ନୈସର୍ଗିକ ବୈରିତା ପରିହାର ପୂର୍ବକ ବିନୀତ ଭାବରେ ବିଚରଣ ମାନ ହୋଇ ରହିଅଛନ୍ତି ।

3. ତେବେ ଯେଉଁ ଲୋକ ଆପଣଙ୍କୁ କୟୁତ୍ କ୍ଷଣ ସ୍ତବ କରି ବିତ୍

ହୁଏ, ସେ କେବଳ ଶ୍ରମ ବା ଆଶକ୍ତି ହେତୁରୁ, ନତୁବା ଗୁଣଗ୍ରହିର ଅବଧି ଲାଭ ହେଲା ସେ ହେତୁରୁ ନୁହେ ।

4. ପ୍ରଭାତକାଳରେ ଏକ ଦିଗର କମଳଜାଳ ପ୍ରଫୁଲ୍ଲ ଅନ୍ୟଦିଗରେ କୁମୁଦବନ ମୁକୁଳିତ ହେଲାରୁ, କୌଶସି ଜଳାଶୟର ଯାଦୃଶୀ ରମଣୀୟତା ହୁଏ ; ବରପକ୍ଷ ଓ ବଧପକ୍ଷ ନୃପଗଣଙ୍କର ହର୍ଷ ଓ ବିଷାଦରେ ସେହି ସ୍ୱୟଂ-ବର-ସଭା ମଧ୍ୟ ସେହିପରି ହୋଇ ଉଠିଲା । (ଖ) ଉପରଲିଖିତ 4-ଚିହ୍ନିତ ବାକ୍ୟରେ ଥିବା ଉପମା କେଉଁ ଜାତୀୟ ? ଉପମାବୋଧକ ଶବ୍ଦ ଯୁଣି ଉପମେୟ ଓ ଉପମାନମାନଙ୍କର ଶିମାନ୍ୱୟରେ ଉଲ୍ଲେଖ କର । (ଗ) ଦିଲ୍ଲୀପତିଙ୍କ ଅରମ୍ଭ କରି ତାହାଙ୍କ ପୁତ୍ର ପୌତ୍ରାଦି ଅଷ୍ଟଧୁରୁଷଙ୍କର ଶିମାନ୍ୱୟରେ ନାମୋଲ୍ଲେଖ କର ।

III. (କ) ରାଜା ଦଶରଥ ମରଣ ସମୟରେ ଅନ୍ଧଋଷିଙ୍କ ଶାପକୁ ସ୍ମରଣ କରି ଉନ୍ମୋଚନରେ ଆପଣାକୁ ଧନ୍ୟ ମନେ କଲେ —ଏହି ବାକ୍ୟରେ ଉଲ୍ଲିଖିତ ହେବା ପୌରାଣିକ ଘଟନାର ଲିଖିତ ବୃତ୍ତ ଲେଖ । (ଖ) 1. 'ବିଜ୍ଞଲୋକ ଉପାୟ ଚିନ୍ତା କଲାବେଳେ ଅପାୟ ଚିନ୍ତା କରିବ ;' ଓ 2. 'ଯେଉଁ ଲୋକ ସ୍ୱପକ୍ଷକୁ ପରିତ୍ୟାଗ କରି ପରପକ୍ଷରେ ରତ ହୁଏ ସେ ପରଦ୍ୱାରା ହତ ହୁଏ' ——ଏହି ଦୁଇଟି ମତର ସମର୍ଥକ ଯଥାମାନ ଭୂମ୍ ଯୁକ୍ତିକରି ଲେଖ । (ଗ) ସନ୍ଧିବିଚକ୍ଷଣ ପଣ୍ଡିତ-ମାନେ ଷୋଡ଼ଶପ୍ରକାର ସନ୍ଧି କହନ୍ତି ; ପ୍ରତ୍ୟେକ ସନ୍ଧିର ନାମୋଲ୍ଲେଖ କରି ସ୍ପଷ୍ଟରୂପେ ବୁଝାଇ ଦିଅ ।

IV. (କ) ନିମ୍ନଲିଖିତ ବାକ୍ୟରେ ପରିତ୍ୟକ୍ତ ଶବ୍ଦମାନ ଯୋଜନା କରି ବାକ୍ୟ ପୂର୍ଣ୍ଣ କର :—ଲୋଭିଲୋକକୁ—ଦ୍ୱାରା, ଧାର୍ମ୍ମିକ ପୁରୁଷକୁ—ଦ୍ୱାରା ମୂର୍ଖକୁ—ରେ, ପଣ୍ଡିତକୁ—ରେ, ବଶ କରିବ । ଏବଂଚ ମିତ୍ରକୁ—ରେ, ବାନ୍ଧବକୁ—ରେ, ସ୍ତ୍ରୀଭୃତ୍ୟ ବୁହିଁଙ୍କୁ—ଓ—ରେ, ଅନ୍ୟଲୋକଙ୍କୁ—ରେ ବଶ କରିବ ।

(ଖ) 1. ମୃଗତୃଷ୍ଣା, 2. ରଘୁ, 3. ତୁଣୀ, 4. ଗ୍ରାମ, 5. ପ୍ରତ୍ୟୁଦ୍‌ଗମନ, 6. ଶଶିମୌଳି, 7. ଶୈବାଳଦାମ, 8. କୌମୁଦୀ ମହୋତ୍ସବ, 9. ଉରଲଙ୍ଘାରକନୟନଯୁଗଳ, ଓ 10. ସୁତସ୍ପର୍ଶ।ମୃତଉତ୍ସାସ୍ୱାଦନ —— ଏମାନଙ୍କର ଅର୍ଥ ଲେଖ ଯୁଣି ଶେଷରେ ଥିବା ପାଞ୍ଚୋଟି ପଦର ସମାସ ଓ ସମାସବାକ୍ୟ ଲେଖ ।

V. (କ) ଯୁଦ୍ଧରତ, ବହୁଜନ, ପ୍ରାତଃସ୍ନାୟୀ, ମୁମୂର୍ଷୁ, ବେଦୀପ୍ୟମାନ, ପୟୋଧି, କଥାୟିତ ଓ ଶନ୍ତ୍ରଜିତ୍ ଏମାନଙ୍କର ଅର୍ଥ ସହିତ ବ୍ୟୁତ୍ପତ୍ତି ଲେଖ ।

(ଖ) ଗ୍ରହବ, ଜନତା, ଅଶ୍ୱତର ଓ ଯୁଗ୍ମତନ ଏମାନେ କେଉଁ ଶବ୍ଦର ଉତ୍ତର କ ଅର୍ଥରେ କ ପ୍ରତ୍ୟୟ କରି ନିଷ୍ପନ୍ନ ହେଲେ ।

VI. (କ) ନିମ୍ନ ଲିଖିତ ପ୍ରତିଶବ୍ଦମାନଙ୍କର ଭିନ୍ନତା ବୁଝାଇ ଦିଅ :— 1. ଦୋଷ, ଅପରାଧ, ପାପ । 2. ଆଶ୍ରୟ, ଅବଲମ୍ବନ । 3. ସେନା, ସୈନ୍ୟ । 4. ଅର୍ଜନ, ପ୍ରାପ୍ତି । (ଖ) ସାମାନ୍ୟ, ପ୍ରତ୍ୟହ, ବାମ, ଅନୁଗ୍ରହ, ଅନୁକୂଳ ଓ ଗୁରୁ ଏମାନଙ୍କର ବିପରୀତାର୍ଥ ବୋଧକ ଶବ୍ଦ ଲେଖ ।

TUESDAY, 17TH DECEMBER, 2 TO 5 P.M.

URIYA: TRANSLATION AND COMPOSITION.

I. Translate into Uriya :—[See Urdu Translation Paper, page xxxii]

II. Translate into English :—

(କ) ସୁନ୍ଦରୀ ଉପବେଶ ଇନ୍ଦୁମତୀଙ୍କ ହୃଦୟଙ୍ଗମ ନୋହିବାରୁ ସେ ତାହାଙ୍କୁ ମଧ୍ୟ ଅତିକ୍ରମ କଲେ । ଯେମନ୍ତ ନିଶୀଥ ସମୟରେ କୌଣସି ସଞ୍ଚାରିଣୀ ଦୀପଶିଖା ରାଜମାର୍ଗର ପାର୍ଶ୍ୱସ୍ଥ ଅଟ୍ଟାଳିକାସ୍ଥ ସୌଧାବଳୀକୁ ଚମତ୍କୃତଗୁଣିତ କରି ଉତ୍ତରୋତ୍ତରବର୍ତ୍ତୀ ପ୍ରାସାଦସବୁ କ୍ରମଶଃ ଉଜ୍ଜ୍ୱଳ କରି ଥାଏ, ସେହି ପରି ଇନ୍ଦୁମତୀ ଯେଉଁ, ଭୂପାଳଙ୍କୁ ଅତିକ୍ରମ କରି ଗମନ କଲେ, ସେମାନଙ୍କର ମୁଖଶଶୀ ମଳିନ ହେବାକୁ ଲାଗିଲା ଏବଂ ପୁରୋବର୍ତ୍ତୀ ରାଜଗଣଙ୍କର ମୁଖମଣ୍ଡଳ ଭବୀୟ ଅନୁରାଗ ଲକ୍ଷଣରେ ସମୁଜ୍ଜ୍ୱଳ ହୋଇଲା ।

(ଖ) କୌଣସି ନୃପତି କନ୍ୟା-ଶୋକରେ ଅତିଶୟ କାତର ହେବାରୁ, ଜଣେ ପଣ୍ଡିତ ତାହାଙ୍କୁ କହିଲେ, କେତେବେଳେ କୌଣସି ଶୋକର ବାର୍ତ୍ତା ଜାଣେ ନାହିଁ ଏପରି ତିନି ଜଣ ଲୋକ ଯଦି କରୁଣା କରି ଦେଇ-ପାରି ତାହାହେଲେ ଆମ୍ଭେ ତୁମ୍ଭର ଦୁହିତାଙ୍କୁ ପୁନର୍ଜୀବିତ କରି ଦେବୁଁ । ନୃପତି ଅନେକ ଅନୁସନ୍ଧାନ କଲେ କଦାପି ଏପ୍ରକାର ଲୋକ ନ ପାଇ ମୌନ ହୋଇ ରହିଲେ ।

(ଗ) 1. ଧନ୍ୱନ୍ତରି ବୈଦ୍ୟ ହେଲେହେଁ ଗତାୟୁ ଲୋକର କି କରି ପାରନ୍ତି ? 2. ମାତା ପୂର୍ବରେ ଯେମନ୍ତ ଧାତ୍ରୀ ନବଜାତ ଶିଶୁକୁ କୋଳ କରେ ସେହିରୂପେ ଜନନୀ ମାତ୍ରେ ପ୍ରଥମେ ଅନନ୍ୟତା ସମସ୍ତଙ୍କୁ କ୍ରୋଡ଼-ରେ କରେ । 3. ଆତ୍ମା ନଦୀସ୍ୱରୂପ, ଇନ୍ଦ୍ରିୟ-ନିଗ୍ରହ ପୁଣ୍ୟତୀର୍ଥସ୍ୱରୂପ, ସତ୍ୟତା ଜଳସ୍ୱରୂପ, ଶୀଳ ତଟସ୍ୱରୂପ, ଦୟା ସ୍ରୋତଃ ସ୍ୱରୂପ, ହେ-

ଯୁଧିଷ୍ଠିର, ଏତଦ୍‌ରୂପ ନଦୀରେ ସ୍ନାନ କର, କେବଳ ଜଳରେ ଅନ୍ତଃକରଣ ଶୁଦ୍ଧ ହୁଏ ନାହିଁ । 4. ମନ୍ତ୍ରୀ କହୁଅଛି, ତଥାପି ଅବସ୍ଥାତ୍ ଯାତ୍ରା କରିବା ଅନୁଚିତ । ଯଥା, ଲୋଭେ କି ଯେଉଁ ମୂଢ଼ମାନେ ଶତ୍ରୁବଳ ବିଚାର ନ କରି ହଠାତ୍ ସୈନ୍ୟମଧ୍ୟରେ ପ୍ରବେଶ କରନ୍ତି, ସେମାନେ କିଞ୍ଚିତ୍ ଗଧାର୍ଥ-ଲକ୍ଷଣ ଲଭନ୍ତି । ରାଜା କହିଲେ, ହେ ମନ୍ତ୍ରୀ, ଆମ୍ଭର ଉତ୍ସାହ-ଭଙ୍ଗ ସଦୃଶ ନ କର କିନ୍ତୁ ଜୟେଚ୍ଛୁ ବ୍ୟକ୍ତି ଯେରୂପେ ପର ଭୂମିରେ ଆକ୍ରମଣ କରିବ ତାହା କହ ।

III. Write an essay in Uriya on "Mountains and their uses."

TUESDAY, 17TH DECEMBER, 10 A.M. TO 1 P.M.

FRENCH: TEXT-BOOKS AND GRAMMAR.

I. 1. Put the article before—homme, amitié, vertu, honte, hameau

2. Supply the proper article, when required, in the following sentences:—Cet homme n'a pas courage. Cet homme n'a pas courage qu'il faut. Hommes, femmes, vieillards, enfants sortirent en hâte.

II. Give:—1. the plural of—chevau-léger, avant-coureur, réveille-matin, contre-poison hôpital, émail, bail, clou, œil, chef-d'œuvre.

2. the feminine of—faux, profès, mou, serviteur, duc, prince.

3. the gender of—amour, délice, aigle, couple, foi, livre, page.

4. the past participle and the present indicative (first person only) of—cueillir, mourir, vaincre, ouvrir, vêtir, suivre, ouir, échoir, s'asseoir, haïr.

III. 1. Write down in French (in words) *A.D.* 1492; *A.D.* 2000; 80 soldiers; 302 horses.

2. Turn into French:—He goes barefoot, bare-headed. It is the naked truth. Blue-black ink.

3. Correct any grammatical inaccuracies you may find in the following sentences:—J'ai mal à ma tête. Ces livres valent cinq francs chaque. En tombant il foula son pied. Elle s'est coupée le doigt.

4. Point out the difference between:—Un honnête homme and un homme honnête; une chose certaine and une certaine chose; être de retour and être sur le retour.

IV. Translate into English:—

1. Il se vit bafoué,
Berné, sifflé, *moqué*, joué.

2. Notre souffleur à gage
Se gorge de vapeurs, *s'enfle* comme un ballon,
Fait un vacarme de démon,
Siffle, souffle, tempête.

3. . . . . Et le grison *se rue*
Au travers de l'herbe menue,
Se vautrant, grattant, et frottant,
Gambadant, chantant, et broutant,
Et *faisant* mainte place nette.

Give the present indicative and the past participle of the verbs in italics.

V. 1. Translate idiomatically the following:—Promettre monts et merveilles. Donner sous main. Rire sous cape. Faire gorge chaude. Aller clopin clopant. Chanter pouille. N'en pouvoir mais. A huis clos. Faire patte de velours

2. What is the meaning of:—Fils de France. Enfant de famille. Le roi des animaux. Des bêtes à laine. Roussin d'Arcadie. Avoir de la naissance.

VI. 1 Partout un vrai prélat, partout aussi un grand seigneur, partout encore l'auteur de Télémaque. Point out the person alluded to here.

2. Fort peu après la musique finie, *le Roi* envoya chercher à l'appartement *Monseigneur* et *Monsieur*, qui jouaient dejà au lansquenet; *Madame*, qui à peine regardait une partie d'hombre auprès de laquelle elle s'était mise. Name the personages indicated by the words in italics.

VII. Illustrate briefly in French the meanings of the following sentences:—

1. Travaillez, prenez de la peine;
   C'est le fonds qui manque le moins.
2. Il n'est pour voir que l'œil du maître.
3. Rien ne sert de courir, il faut partir à point.

VIII. 1. Pourvu que Jupiter
   Le laissât disposer de l'air,
   Lui donnât saison à sa guise,
   Qu'il eût *du chaud, du froid*, du beau temps, de la bise,
   Enfin *du sec* et *du mouillé*.
   Autant qu'il *aurait baillé*.

2. *Un tiens* vaut mieux que *deux tu l'auras*.

3. Un reste d'attachement *que* le Roi avait pour elle lui faisait craindre *qu'*elle ne reprît sa même place, *qu'*il semblait *que* sa sœur n'eût perdue *que* pour lui rendre. Parse the words in italics.

IX. Re-write the following according to the present rules of spelling:—1. Les trouppes des Princes, qui estoient à Poissy, s'estant apperçues que l'armée du Roy vouloit venir les attaquer. 2. Les soldats du Prince qui estoient retranchés dans les maisons des coins de cette rue, despuis le premier estage jusques aux greniers, où ils avoient deffait la couverture pour passer la teste. . . .

Tuesday, 17th December, 2 to 5 p.m.

FRENCH: TRANSLATION.

I. Translate into English:—

1. M le Prince est né capitaine, ce qui n'est jamais arrivé qu'à lui, à César et à Spinola. Il a égalé le premier; il a passé le second. L'intrépidité est l'un des moindres traits de son caractère. La nature lui avait fait l'esprit aussi grand que le cœur. La fortune, en le donnant à un siècle de guerre, a laissé au second toute son étendue. La naissance, ou plutôt l'éducation, dans une maison

attachée ou soumise au cabinet, a donné des bornes trop étroites au premier. L'on ne lui a pas inspiré d'assez bonne heure, les grandes et générales maximes, qui sont celles qui font et qui forment ce que l'on appelle l'esprit de suite.

2. Mais M. le Prince, étant enragé de cela, retourna l'épée à la main avec cent mousquetaires du régiment de l'altesse, et ce qu'il trouva d'officiers de cavalerie ou d'infanterie sous sa main, au nombre de trente ou quarante, et quelques volontaires, reprit la barricade, et en chassa les ennemis. Elle était défendue par le régiment des gardes, celui de la marine, Picardie et Turenne, qui étaient sans doute leurs meilleurs régiments et les plus forts qu'ils eussent. Enfin il fit des choses qui passent l'imagination, tant par sa grande valeur que par la prudence avec laquelle il agit, et un sang-froid que tout le monde admira.

3. Monseigneur le duc de Bourgogne pleurait d'attendrissement et de bonne foi, avec un air de douceur, des larmes de nature, de religion, de patience. Mr. le duc de Berry, tout d'aussi bonne foi en versait en abondance, mais des larmes pour ainsi dire sanglantes, tant l'amertume en paraissait grande; et poussait non des sanglots, mais des cris, mais des hurlements. Il se taisait parfois, mais de suffocation, puis éclatait, mais avec un tel bruit, qui semblait tellement la trompette forcée du désespoir, que la plupart éclataient aussi à ces redoublements si douloureux, ou par un aiguillon d'amerturne, ou par aiguillon de bienséance.

4. Un riche laboureur, sentant sa mort prochaine,
Fit venir ses enfans, leur parla sans témoins :
Gardez-vous, dit-il, de vendre l'héritage
Que nous ont laissé nos parens,
Un trésor est caché dedans.
Je ne sais pas l'endroit, mais un peu de courage
Vous le fera trouver; vous en viendrez à bout.
Remuez votre champ dès qu'on aura fait l'oût :
Creusez, fouillez, bêchez, ne laissez aucune place
Où la main ne passe et repasse.
Le père mort, les fils vous retournent le champ,
Deçà, delà, partout; si bien qu'au bout de l'an,
Il en rapporta davantage.
D'argent, point de caché. Mais le père fut sage,
De leur montrer, avant la mort,
Que le travail est un trésor.

5. Chacun se trompe ici-bas :
On voit courir après l'ombre
Tant de fous, qu'on n'en sait pas,
La plupartdu tems, le nombre.
Au chien dont parle Ésope il faut les renvoyer.
Ce chien voyant sa proie en l'eau représentée,
La quitta pour l'image, et pensa se noyer :
La rivière devint tout d'un coup agitée ;
A toute peine il regagna les bords,
Et n'eut ni l'ombre ni le corps.

II. Translate into French:—

1. Cromwell, I charge thee, fling away ambition:
By that sin fell the angels; how can man, then,
The image of his Maker, hope to win by't?
Love thyself last: cherish those hearts that hate thee.
Corruption wins not more than honesty.
Still in thy right hand carry gentle peace,
To silence envious tongues. Be just, and fear not.
Let all the ends thou aim'st at be thy country's,
Thy God's and truth's: Then, if thou fall'st, O Cromwell,
Thou fall'st a blessed martyr.

2. Valour, loyalty, courtesy, munificence, formed collectively the character of an accomplished knight, so far as was displayed in the ordinary tenor of his life, reflecting these virtues as an unsullied mirror. Yet something more was required for the perfect idea of chivalry and enjoined by its principles, an active sense of justice, an ardent indignation against wrong, a determination of courage to its best end, the prevention or redress of injury. It grew up as a salutary antidote in the midst of poisons, while scarce any law but that of the strongest obtained regard, and the rights of territorial property, which are only rights as they conduce to general good, became the means of general oppression.

III. Translate into English:—

1. Comment aurait-on jamais pu imaginer que sous une enveloppe si fine, si délicate, si belle, si polie, si intelligente et si noble pût se cacher une cruauté aussi perfide? Forcer des êtres absolument innocents à une disgrâce perpétuelle par la seule raison que le malheur les a touchés, les voir souff sans pitié, et se réjouir de leur infortune, et cela de sang-froid et par principe . . . O noble Angleterre, vengeresse de toutes les tyrannies, quand de ton bras puissant mettras-tu un terme à pareille infamie?

2. Par son ordre, Gramont, le premier dans les flots,
S'avance soutenu des regards du héros.
Son coursier, écumant sous son maître intrépide,
Nage, tout orgueilleux de la main qui le guide
Revel le suit de près: sous ce chef redouté
Marche des cuirassiers l'escadron indompté.
Mais déjà devant eux une chaleur guerrière
Emporte loin du bord le bouillant Lesdiguière.
Vendôme que soutient l'orgueil de sa naissance,
Au même instant dans l'onde impatient s'élance.
Louis les animant du feu de son courage,
Se plaint de sa grandeur qui l'attache au rivage.

WEDNESDAY, 18TH DECEMBER, 10 A.M. TO 1 P.M.

ARITHMETIC.

[*N.B.*—(1) *Answers in money must be stated in £.s.d. or in Rs.a.p. as the case may be, and not as fractions of £1 or of Rs. 1.* (2) *Except*

in the case of question I., the process by which each result has been obtained must be given in full.]

I. Add together (without copying out) the following sums and write down the results :—

£	s.	d.	Rs.	a.	p.
172	19	$7\frac{3}{4}$	12851	3	4
4372	13	$6\frac{1}{2}$	208	13	10
267	11	9	3796	10	7
29	3	$0\frac{3}{4}$	82	1	9
7901	9	$11\frac{1}{4}$	53028	9	5
99	17	$8\frac{1}{2}$	203	15	11
5	3	$10\frac{1}{4}$	8888	9	1
149	0	7	535	15	8
6	15	$9\frac{1}{2}$	26	0	10
1000	6	$5\frac{3}{4}$	24370	12	2

II. Simplify $\dfrac{\frac{1}{3}+\frac{1}{7}\div(\frac{1}{7}-\frac{1}{9})}{(\frac{1}{3}+\frac{1}{7})\div\frac{1}{7}-\frac{1}{9}} \div \dfrac{1\frac{7}{8}+\frac{3}{28}}{\frac{7}{8}-\frac{1}{7}} - \dfrac{\frac{1}{2}\text{ of }\frac{1}{3}}{\frac{1}{2}\div\frac{1}{3}}$

III. Multiply 41·36514 by ·0019, expressing the result as a decimal; and find the value of ·3472 of £1 4*s*.—·03288 of £2 6*s*. 3*d*.

IV. Find by any method the cost of 79ca. 17m. 5v. 25 pal. of salt at Rs. 21 10*a*. 8*p*. per candy.

V. The cost of rice for a family of 2 adults and 3 children from January 1st, 1889, to December 11th, 1889, both days inclusive, during which time rice was selling at 15·4 seers per rupee, was Rs. 70 7*a*. What will be the cost of rice for a family of 3 adults and 5 children from December 19th, 1889, to May 11th, 1890, both days inclusive, assuming that the price of rice will be 14·7 seers per rupee, and assuming also that the quantity required per day by each adult is the same in both cases, and that in both cases the quantity required by a child is two-fifths of the quantity required by an adult?

VI. On what sum due 1 year 4 months hence does the true discount amount to £100 18*s*. 9*d*., simple interest being reckoned at $4\frac{3}{4}$ per cent. per annum?

VII. How much 3 per cent. stock must a person sell when the selling price is 91 in order that by investing the proceeds in the $4\frac{1}{2}$ per cents. at $113\frac{3}{4}$ he may derive from the investment an annual income of Rs. 9817 8*a*., after paying income-tax at the rate of 5 pies per rupee?

VIII. A and B can do a piece of work in 10 days, B and C in 15 days, and C and A in 20 days. They all work at it for 6 days; then A leaves, and B and C go on together for 4 days more. If B then leaves, how long will C take to complete the work?

IX. In a certain year the total amount received by a railway company for the carriage of passengers was Rs. 27,51,000. Of this sum 6 per cent was contributed by first class passengers, 5 per cent. by second class, and the remainder by third class. The fares were 18, 6, and $1\frac{3}{4}$ pies per mile for first, second, and third class

passengers respectively. Assuming that the average distance travelled by each third class passenger was 36 miles, and the average distance travelled by each passenger of the other classes was 160 miles, find the total number of passengers carried during the year.

X. The length of a rectangular field is twice its breadth. If the rent of the field at £3 7*s.* 6*d.* an acre is £15$\frac{1}{4}$ 17*s.* 6*d.*, find the cost of surrounding it with a fence at 4$\frac{3}{4}$*d.* per yard.

XI. Extract the cube root of 9 to five decimal places.

WEDNESDAY, 18TH DECEMBER, 2 TO 3-30 P.M.

ALGEBRA.

I. Simplify the expressions:—

$$x - [a - \{2a - (3a - \overline{4a - x})\}].$$

$$\{(x^{a+b-c} \times x^{a-b+c})^b\}^c.$$

$$(a + b)^m \times (a - b)^m \times (a^2 + b^2)^m.$$

II. Arrange the expression $x(p + x)\{p^2 + q^2 - x(p - x)\} - (p^2 + qx)(2x^2 - qx + q^2)$ in powers of x; and divide it by $x^2 + (p - q)x - p^2$

III. If $x^2 = ab + bc + ca$ show that $(a^2 + x^2)(b^2 + x^2)(c^2 + x^2)$ is a perfect square.

Extract the square root of $1 - xy - \frac{15}{4}x^2y^2 + 2x^3y^3 + 4x^4y^4$.

IV. 1. Find the G. C. M. of $7x^3 - 19x^2 + 17x - 5$ and $2x^4 - x^3 - 9x^2 + 13x - 5$.

2. Simplify the expression:—

$$\frac{b^2 + c^2 - 2a^2}{(a - b)(a - c)} + \frac{c^2 + a^2 - 2b^2}{(b - c)(b - a)} + \frac{a^2 + b^2 - 2c^2}{(c - a)(c - b)}.$$

V. Solve the equations:—

$$\frac{(x + 1)(x + 9)}{(x + 2)(x + 4)} = \frac{(x + 6)(x + 10)}{(x + 5)(x + 7)}.$$

$$x + \sqrt{(x^2 + 9)} = 9.$$

$$x - 2y = 5, \quad 3y + 4z = 6, \quad 5z + 6x = 21.$$

VI. A person bought 166 mangoes for ten rupees; some he bought at the rate of 18 per rupee, and the rest at 15 per rupee. How many did he buy of each sort?

THURSDAY, 19TH DECEMBER, 10 A.M. TO NOON.

GEOMETRY.

I. If two triangles have two angles of the one equal to two angles of the other, each to each, and have likewise the sides adjacent to these angles equal, then the triangles are equal in all respects.

II. Define a *rectangle*, a *square*, and a *rhombus*.

Describe a rhombus equal to a given rectangle.

A square and a rhombus stand on the same base. Which has a larger area and why?

III. If a parallelogram and a triangle stand on the same base and between the same parallels the parallelogram is double of the triangle.

E is a point in the side *AD* of a parallelogram *ABCD*; prove that the triangles *EAC* and *EBD* are together equal to half the parallelogram.

IV. If a straight line be divided into two equal and also into two unequal parts, the rectangle contained by the unequal parts together with the square on the line between the points of section is equal to the square on half the line

If x, y be the lengths of two straight lines of which the first is the greater, illustrate by a figure the formula $(x+y)^2 = (x-y)^2 + 4xy$.

V. Give the construction *only* for drawing the tangent to a given circle from a point which is 1, on the circumference and 2, without the circle.

AB is the diameter of a circle which intersects at *C*, *D* any circle having *A* for its centre. Prove that *BC*, *BD* are tangents to the second circle.

VI. The angle at the centre of a circle is double the angle at the circumference standing on the same arc.

ABCD is a square; arcs of circles *EC* and *BED* are described with centres *B* and *C* respectively, cutting one another at the point *E* within the square. Prove that the angle *BDE* is a third of a right angle.

THURSDAY, 19TH DECEMBER, 2 TO 3-30 P.M.

PHYSICS.

I. Explain the term 'force.' Describe experiments to show (1) that it needs force to stop a moving body, and (2) that it needs force to start a body at rest.

II. Two uniform discs, *A* and *B*, are freely suspended in a vertical plane by strings, A from a point one inch below, and *B* from a point one inch above the centre. What will take place if each disc is slightly displaced, and why?

III How would you test the purity of an irregular lump of gold by means of the balance? Give reasons for the method which you would adopt.

IV. Describe the barometer. Explain clearly why the mercury stands at different heights at the foot and summit of a mountain.

V. A musical box having been set in motion is placed under the receiver of an air pump. Describe and account for the effect produced by exhausting the air.

VI Define 'specific heat.' Which has the greater specific heat, water or mercury? Describe an experiment to prove the correctness of your answer.

VII. State the two laws of reflection of light If a ray of light falls perpendicularly on a polished surface, how will it be reflected?

VIII A coin at the bottom of an empty jar is hidden from an observer by the side of the jar, but is visible if the jar is filled with water. Explain this by a sketch.

IX. Two pith balls are suspended by silk threads; the first is touched with excited glass, and the second with excited sealing wax,

If the balls are now placed near together how will they be affected? Explain your answer fully.

X. Describe Grove's battery Explain how it may be used for decomposing water.

THURSDAY, 19TH DECEMBER, 3-35 TO 5-5 P.M.

CHEMISTRY.

I. Describe how you would ascertain the qualitative composition of water? Having proved that water contains both oxygen and hydrogen, how would you show the proportion in which these elements are combined, by weight as well as by volume? What quantity of water is represented by the formula OH_2?

II. Iron precipitates copper from solutions containing the latter metal. What compound is formed when a plate of iron is placed in a solution of copper sulphate? Write an equation for the change which takes place, and calculate the quantity of the compound referred to which can be obtained from 1 lb. of the copper salt.

$Fe = 56$. $Cu = 63{\cdot}5$. $O = 16$. $S = 32$.

III. What is given off, and what is left behind, when coal is (1) completely burnt in an open grate, and (2) heated strongly in closed vessel provided with a delivery tube?

IV. Name the most important metallic elements, indicating which do and which do not occur in the free state. Mention what you consider to be the most important compound of each element, and state anything of importance which you know concerning the compounds selected.

V. How are the following substances prepared, and what are their properties:—hydrochloric acid, epsom salts, green vitriol, nitric acid, quicklime, silver nitrate?

VI. Name the compounds formed when the following elements are heated in air or oxygen:—magnesium, sulphur, carbon, sodium, copper, phosphorus, zinc? Do the compounds thus produced exhibit any points of resemblance or difference? If so, name them

FRIDAY, 20TH DECEMBER, 10 A.M. TO NOON.

INDIAN HISTORY.

I. State very briefly the subject matter of the two epics, the Ramayana and the Mahabharata.

II. Mention the leading points in which the teachings of Buddha were opposed to the Brahmanic creed.

III. Sketch very briefly the history of Babar

IV. 1 By what administrative acts and reforms did Akbar endeavour to conciliate his Hindu subjects?

2. What causes, internal and foreign, led to the decline of the Mughal power in the time of Aurangzeb?

V. Narrate very briefly the history of the downfall of the Hindu kingdom of Vizianagar.

VI. When, and with what object, was the East India Company formed? When, and under what circumstances, was it abolished?

VII. 1. What led to the war with Tippu in 1799, and what were its immediate consequences?

2. When, why, and how were the dominions of the Peshwas dismembered?

VIII. What annexations were made to the British Empire in India under the administration of the Marquis of Wellesley and Lord Dalhousie?

FRIDAY, 20TH DECEMBER, 12-5 TO 2-5 P.M.

ENGLISH HISTORY.

I. By whom was Edward the Elder greatly helped in his warfare with the Danes, and what was the result of the contest?

II. Relate briefly the circumstances under which Scotland recovered its independence. When was it finally acknowledged?

III. Give the reasons which determined Edward III. to invade France. How far was he successful? By what treaty was the war brought to a close?

IV. What titles were put forward by the impostors who appeared as claimants for the throne, during the reign of Henry VII? What was their fate?

V. Write short biographical notices on Thomas Cromwell and Sir Thomas Wentworth.

VI. When, between whom, and with what results, were the following battles fought:—Brunanburg, Agincourt, Pinkie, Sedgemoor, and Aboukir?

VII. Name *any two* treaties of peace which have been made by England since the beginning of this century, and mention (1) the contracting parties, (2) the wars which they brought to a close, and (3) the terms of the treaties.

VIII. Give a brief account of the circumstances that led to the union of the Irish and English Parliaments. Who was Prime Minister at the time?

FRIDAY, 20TH DECEMBER, 3 TO 5 P.M.

GEOGRAPHY.

I. On the accompanying map *

1. Clearly mark the outline of each of the following provinces, &c., and underline the names of those which are native states:—Kashmir, Panjab, N. W. Provinces, Rajputana, Maisur, Bombay, Central Provinces, Sikkim, Travancore.

2. Mark the courses of the rivers Ganges, Indus, Jumna, Kaveri, Godaveri.

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* *An outline map of India was supplied to each candidate.*

3. Mark the positions of the following towns:—Puna, Agra, Coimbatore, Multan, Katmandu, Bimlipatam.

4. Show the railway communication between Madras and Calcutta.

II. Describe briefly the physical features of Java, the Nilgiris, and Newfoundland

III. Say exactly what is meant by monsoon. Show that similar causes produce similar climatic effects in South India and South Africa.

IV. Of what parts of India are the following the *chief* commercial products:—jute, cotton, tea, opium? What are the great wheat, rice, and maize growing districts of the world?

V. What are the chief manufactures of Sheffield, Manchester, Lombardy, Stockholm, Tanjore, Calcutta, Murshidabad, and Faizabad?

VI. Name all the ordinary ports of call for steamers following the Suez Canal route from London to Yokohama

VII. In what countries of the world are English, French, German, Spanish, and in what parts of India are Telugu, Kanarese, and Hindustani, the principal languages?

FIRST ARTS EXAMINATION, 1889.

MONDAY, 16TH DECEMBER, 10 A.M. TO 1 P.M.

ENGLISH POETRY.

I. 1. Paraphrase the following passage, naming the speaker:—

This England never did, nor never shall,
Lie at the proud feet of a conqueror,
But when it first did help to wound itself.
Now these her princes are come home again,
Come the three corners of the world in arms,
And we shall shock them. Nought shall make us rue
If England to itself do rest but true.

Quote or give the substance of a couplet in Byron's 'Greece' expressing a similar sentiment.

2. Write a short paragraph expounding 'the leading thought of the play,' which, it has been said, 'is intimated' in the above extract.

3. Point out not more than three deviations from actual history (not mere anachronisms) in the play of King John, and account for the fact that no mention is made in it of the *Magna Charta*.

II. 1. Describe how the Bastard and Constance were respectively affected by the knowledge of the fact that Lewis and Blanche had 'gone to be married.'

2. Show how the principle of 'poetical justice' is satisfied in the fate of Constance.

III. 1. What is the grand moral of Paradise Lost?

2. "An Heroic Poem, according to the opinions of the best critics, ought to end happily, and leave the mind of the reader, after having conducted it through many doubts and fears, sorrows

and disquietudes, in a state of tranquillity and satisfaction." How far has Milton in Paradise Lost fulfilled this condition of excellence in an heroic poem?

3. Addison thought that the Poem should have ended with the couplet:—

The world was all before them, where to choose
Their place of rest, and Providence their guide.

Milton thought otherwise, adding the lines:—

They hand in hand, with wandering steps and slow,
Through Eden took their solitary way.

What may be said in support of Addison's view? Defend Milton's course.

IV. 1. Describe the cause, the manifestation, and the effects of the alienation of Roland and Sir Leoline.

2. How may it be shown that one can see more in the darkness than in the light; and what lesson is drawn from this circumstance by Blanco White in his sonnet?

3. Describe the metre of 'the Shamrock,' 'the Skylark.' and the Fall of Sennacherib.'

V. Express in your own words the meaning of the following extracts:—

1. What since thou sworest is sworn against thyself
And may not be performed by thyself,
For that which thou hast sworn to do amiss
Is not amiss when it is truly done,
And being not done, where doing tends to ill,
The truth is then most done not doing it

2 Yet know withal
Since thy original lapse, true liberty
Is lost, which always with right reason dwells
Twinned, and from her hath no dividual being.

3. Subverting worldly-strong and worldly-wise
By simply meek

4. Oh sir the good die first
And they whose hearts are dry as summer dust
Burn to the socket.

5. Be pleased then
To pay that duty which you truly owe
To him that owes it, namely this young prince.

6. Our birth is but a sleep and a forgetting;
The soul that rises with us, our life's star,
Hath had elsewhere its setting
And cometh from afar.

VI 1. Point out and correct errors in the following extracts, giving reasons for any changes you make:—

(a) Of Arthur whom they say is killed to-night.

(b) Now is the stately column broke
The beacon light is quenched in smoke.

(c) Yet can't thou without thought or feeling be?
Oh say what art thou when no more thou'rt thee?

2. Parse and give the construction of the words in italics :—
   (*a*) Ere the third dawning light *return.*
   (*b*) 'Twere long *to tell.*
   (*c*) Slowly and sadly we laid him down
   From the field of his fame fresh and *gory.*

To what part of speech is the phrase 'from the field of his fame' equivalent, and what is its construction?

3. Show how Shakespere pronounced the word *Rome*, and how Milton pronounced *argue.*

4. Bring out the humour in the Bastard's reply :—
   Sal. Must I rob the law?
   [*Drawing his sword.*
   Bast. Your sword is bright, sir; put it up again.

5. Fully state the comparison indicated in the following line.
   'Tis but as ivy-leaves around the ruined turret wreathe.

VII. Give in your own words the meaning of each of the following :—
Lord of my presence—charked, *quoted*, and signed—for aught he knew—to cull the plots of best advantages—servant of servants—a quire of squadroned angels—fiery darts—this top of speculation—colours nailed to the mast—the sullied olive-branch—crowned and mitred tyranny—thoughts too deep for tears.

VIII. 1. Give the meaning of *so* in each of the following extracts and explain how the word came to have the meaning which is expressed in the first of these examples :—
   By my christendom,
   (*a*) *So* I were out of prison and kept sheep,
   I should be as merry as the day is long;
   And *so* I would be here, but that I doubt
   My uncle practises more harm to me.
   (*b*) We will not * * ttend the foot
   That leaves the print of blood where'er it walks.
   Return and tell him *so.*

2. Give the exact force of the words in italics:—
   Her sin *his* injury,
   Her injury the beadle to her sin.

3. Show that there is a redundancy in each of the following:—
   (*a*) *An if* thou hast the mettle of a king.
   (*b*) Doubt not *but that* sin will reign among them.
   (*c*) Without the vent of words; *which these* he breathed.

IX. Point out and explain the allusions in the following extracts :—
1. *Lady F.* What means this scorn, thou most untoward knave?
   Bast Knight, knight, good mother, Basilisco-like.
2. Look where three-farthings goes.
3. Worth a hundred Agincourts.
4. The double-founted stream,
5. Thus with ten wounds,
   The river-dragon tamed at length submits,
   To let his sojourners depart.
6 Needs must the serpent now his capital bruise
   Expect with mortal pain.

MONDAY, 16TH DECEMBER, 2 TO 5 P.M.

ENGLISH PROSE.

I. 1. Briefly relate the circumstances connected with the sale of the manuscript of the *Vicar of Wakefield.*

2. The plot of the *Vicar of Wakefield* contains many improbabilities. (*a*) Mention two of the improbable occurrences that are the means of finally bringing together and making happy the members of the Vicar's family; and (*b*) quote, or give the substance of, a reflection of Goldsmith's, when these improbabilities are at their height, which shows that he felt the need of making an apology for them.

II. 1. Mention the chief features of the character of Dr Primrose, and refer, in connection with any two of them, to some incident in the text which illustrates them.

2. Mention any two circumstances in the *Vicar of Wakefield* that are apparently of an autobiographical character.

III. 1. Dr. Primrose says, "The ignorant peasant without fault, is greater than the philosopher with many; for what is genius or courage without a heart?

'An honest man's the noblest work of God.'"

Give the substance of Mr. Burchell's reply to this.

2. State very briefly Goldsmith's argument against the capital punishment of offences of a slight nature.

IV. 1. Refer to any occasion on which Mrs. Primrose manifests her motherly vanity, and her desire to appear genteel.

2. State (*a*) how, and with what result, Moses Primrose first made the acquaintance of Ephraim Jenkinson; and (*b*) in what character each of the Primroses appeared in the family picture, and why the picture was compared to Robinson Crusoe's longboat.

3. Explain the following:—(*a*) faces patched to taste; (*b*) to cross her hand with silver; (*c*) to give them gingerbread by letters at a time; (*d*) warm fortunes; (*e*) a Cartesian system, each orb with a vortex of its own

V. 1. (*a*) Give the responses of the oracle of Delphi that Crœsus took to be favorable to his going to war with the Persians; and (*b*) state the reply of the Pythoness to his charge of ingratitude against Apollo.

2. Mention any one of the Babylonian customs that Herodotus records with approval By what means did Cyrus succeed in taking Babylon, and by what stratagem did it at a later time fall into the hands of Darius?

VI. 1. State what appeared to Herodotus particularly strange about the annual inundations of the Nile, and what he thought to be the least plausible explanation of the phenomenon.

2. Explain the story of the winged serpents from Arabia.

3. Give, with the reason why Herodotus accuses Homer of knowing and yet suppressing it, the Egyptian version of the story of Helen.

VII. 1. Swayne says that "despotism was fated to receive its death-blow at Athens" through Agaristo, the daughter of Cleisthenes of Sicyon. Show clearly how this took place.

2. Sketch the character of Themistocles. What different account of the conduct of Themistocles, in connexion with the battle of Salamis, and its results is given by Æschylus?

VIII. 1. What events of modern history does Swayne suggest as parallel to (*a*) the Lydian horsemen fighting on foot before Sardis, and (*b*) the last stand of the Greeks at Thermopylæ? What is the probable explanation of the 'arrow' of Abaris, and why does Herodotus pronounce apocryphal the voyage of the Phœnician ships round Africa?

2. What is meant by (*a*) the love of horse-flesh—in the civilised sense, (*b*) a four-horse family, and (*c*) to run the gauntlet? Why was the right of the line of battle the post of honour, and who were the Persian 'Immortals'?

3. Explain:—(*a*) Perhaps Marathon made Morgarten possible. (*b*) I see how it is, Histiæus, thou hast stitched the shoe, and Aristagoras has put it on. (*c*) The barometer of Hellenic confidence fell again. (*d*) Miss Livy's feet seemed as pat to the music as its echo. (*e*) I'll warrant we'll never see him sell his hen of a rainy day

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TUESDAY, 17TH DECEMBER, 10 A.M. TO 1 P.M.

ENGLISH LANGUAGE.

I Paraphrase:—

'Tis not the babbling of a busy world,
Where praise and censure are at random hurled,
Which can the meanest of my thoughts control
Or shake one settled purpose of my soul;
Free and at large might their wild curses roam,
If all, if all, alas! were well at home.
No, 'tis the tale which angry conscience tells,
When she with more than tragic honor swells
Each circumstance of guilt, when stern, but true,
She brings bad actions forth into review,
And like the dread handwriting on the wall,
Bids late Remorse awake at Reason's call.

II. 1. 'The majority of words in the English Tongue are not English and yet the language is English.' Reconcile these statements

2 State from what word each of the following has been abbreviated:—palsy, proxy, sexton, surgeon.

3. Show how the derivation of the following words is obscured by the way in which they are spelt:—aisle, whole, scent, forego.

III In the following sentences state what objection may be taken to each of the words in italics, substitute or mention the appropriate word, and use each of the italicized words correctly in a sentence of your own:—

1 Shakespeare was the *mutual* ancestor of Englishmen and Americans

2. Sometimes she had lodgers who were often there also. She had an *alternation* of them There was the corn-merchant, the advocate, the clergyman, &c.

3. You must not consider that I am wishing to *deteriorate* in the slightest degree from the merits of that great and good man.

4. A *capacious* rent has been made in a part of his costume.

5 His atrocious taste in dress might have been *condoned* by modesty of mien.

6. Burke could trace effects to their causes and *predicate* from the actual what must be the future.

IV. 1. 'In poetry, words are frequently used with an accentuation (or a pronunciation) different from that adopted in ordinary speech.' Point out such words in the following extracts, mark the accent in each, and show where it would be placed in 'ordinary speech' of the present day :—

(*a*) Or ask of yonder argent fields above,
Why Jove's satellites are less than Jove.

(*b*) At Edmonton his loving wife
From the balcony spied
Her tender husband, wondering much
To see how he did ride.

(*c*) Fame if not double faced is double mouthed
And with contrary blast proclaims most deeds.

(*d*) 'Twixt that and reason what a nice barrier
For ever separate, yet for ever near.

(*e*) But to convince the proud what signs avail
Or wonders move the obdurate to relent?

(*f*) Instruct my daughter how she shall persevere
That time and place with this deceit so lawful
May prove coherent.

2. Write down the following words in a column and show that you know how to pronounce them by writing opposite to each a word that rhymes with it :—*foot, water, lose, cease, door, tour.*

V. 1. What was originally the case absolute?

2. What was originally the form of the infinitive?

3. What is the only example in the language of a reduplicated verb?

4. What was originally the spelling of *it?*

5. Which of the ordinals is of foreign origin and what Saxon word did it supplant?

6. What is the letter *r* in *children* and *near* respectively, and what is the *m* in *am* and *seldom?*

VI. 1. Introduce each of the following words *used metaphorically*, into a sentence of your own and bring out the comparison implied :—pillar, reins, helm, avenue.

2. Show by illustrative sentences that you understand the difference in meaning or in usage between the words in the following pairs :—informer and informant, receiver and recipient, receipt and reception, personalty and personality.

VII. Explain each of the following sentences:—

1 In the accounts we have had of the recent strikes in London, one thing stands out clear, and that is that it was the laborers and not their employers who were masters of the situation.

2. Tired of our forced inaction, we longed to try conclusions with the enemy in the open.

3. The Police felt they were on their trial, and left no stone unturned to bring home the guilt to the prisoners.

4. He gave himself such airs when he came to see me, that I lost no time in sending him about his business.

5. There are statesmen who need to be reminded that the cry of Wolf! Wolf! which they so delight in raising, may bring the wolf upon them sooner than they expect.

6. I feel that, if I took the step you advise, I should indeed be crossing the Rubicon.

VIII. Write an essay of three pages on *one* of the following subjects:—'The proper employment of one's leisure hours' *or* 'The value of libraries public and private.'

TUESDAY, 17TH DECEMBER, 2 TO 5 P.M.

PHYSIOLOGY.

I. Describe the structure of an artery and compare it with that of a vein. State the structural difference between a large artery (as the aorta) and a small artery, and give the physiological reasons for this difference.

II. Describe the structure of a red blood corpuscle and of a white blood corpuscle. What is the function of the red corpuscles and how do they perform this function?

III. State the difference between the blood in the left auricle and that in the right auricle. Explain fully how the differences are brought about.

IV. Explain as minutely as possible what becomes of the nutritive matters in the small intestine after they have been acted upon by the bile and by the pancreatic and intestinal juices.

V. Describe and give a diagram of a single tubule of the kidney, What substances, are found in the urine? Of what use is it to the body to secrete urine?

VI. Describe the structure of the sweat glands, and explain how they affect the regulation of the temperature of the body.

VII. Give an example of a 'hollow' muscle, a muscle attached to a bony lever, a ligament, and a tendon. Show how the arrangements in each case are suited to the work to be performed.

WEDNESDAY, 18TH DECEMBER, 10 A.M. TO 1 P.M.

SANSKRIT: TEXT-BOOKS AND GRAMMAR.

I. Paraphrase freely in Sanskrit:—

1. संक्रान्तवर्णान्तरगाधिसूनोः

सम्पर्कपुण्यादिव रामभद्रः ।
क्षात्रक्रमात् पिप्पलदण्डयोग्यः
पलाशदण्डाहृतपाणिरासीत् ॥

2. अपहृतविबुधार्तेर्वामनव्याजमूर्त्तेः
अखिलभुवनभिक्षोराश्रमानोकहानाम् ।
ततिरियमतिनीला व्याप्तदिग्व्योमसीमा
स्वयमपि परिमातुं लोकमभ्युद्यतेव ॥

3 लङ्केश्वरप्रणतिभङ्गदृढव्रतं तत्
वन्द्यं युगं चरणयोर्जनकात्मजायाः ।
ज्येष्ठानुवृत्तिजटिलञ्च शिरोऽस्य साधोः ।
अन्योन्यपावनमभूदुभयं समेत्य ॥

II. Write explanatory notes in English on :—

1. आजानपावनक्षीरां वृषानन्दविधायिनीम् ।
श्रुतिप्रणयिनीं सोऽयमापगामाप गामिव ॥

[*N.B*—Only two meanings are required, one as relating to the उपमान and another as relating to the उपमेय]

2. एको दाशरथिः कामं यातुधानाः सहस्रशः ।
ते तु यावन्त एवाजौ तावांश्च ददृशे स तैः ॥

3. त्राणाभावे हि शापास्त्राः कुर्वन्ति तपसो व्ययम् ॥

4. उरीकृत्यात्मनो देहं राज्यमस्मै न्यवेदयत् ॥

5. एतेऽपि पावका रूढिशङ्कावहां हुतवहाख्यां वहन्तस्तद्गृहे गार्हपत्यपुरस्सराः पौरोगवीं धुरं दधति ॥

III. Give in English the meanings of the underlined expressions in the following :—

1. नय इव पणबन्धव्यक्तयोगः, 2. सिन्धुरसहस्रप्राणा, 3. कोशिन्या लङ्घितप्रथमाश्रमः, 4. स्वर्गाभिष्यन्दवमनम्, 5.

बलिनियमपरः, 6. वने वन्येन वर्त्तयन्, 7. क्लृप्तरम्योपकार्ये पथि, 8. वैरूप्यपौनरुक्त्यम्, 9. आसिधारव्रतम्, 10. परिवेत्ता, 11. वीरपाणम्, 12. पतिवत्नी.

IV. 1. Give the force of the affixes in the following:—(*a*) पुत्रीया (*b*) जनता (*c*) सांयुगीन (*d*) गणशः (*e*) आतिथेय (*f*) दिव्य.

2. Is there any inconsistency between the grammatical form of चिकित्सा and its meaning? Quote a similar instance.

3. What part of speech is आस in निष्प्रभश्च रिपुरास भूभृताम्?

V. Write grammatical notes on— 1. मनीषा 2. मध्येपयोनिधि 3. कौसल्याजानिः 4. परमेष्ठी 5. दृढभक्तिः 6. उद्यम्य दक्षिणन्दोर्निशाचरः 7. अन्धतमसम् 8. रघूणाम् 9. पत्नी 10. अहर्पतिः 11. शरवणम् 12. ललाटन्तपः.

VI. 1 Dissolve the following compounds:—(*a*) छायावृक्षः (*b*) अवाङ्मनसगोचरम् (*c*) चतुर्वर्णमयः (*d*) सप्तार्णवजलम् (*e*) अधोक्षजः (*f*) अर्द्धार्द्धभागाभ्याम्.

2. रामादेशादनुगता सेना तस्यार्थसिद्धये।
पश्चादध्ययनार्थस्य धातोरधिरिवाभवत् ॥

Explain the simile.

3. What is the Sanskrit equivalent of *as soon as*

4. ते च प्रापुरुदन्वन्तं बबुधे चादिपूरुषः What is the force of the repetition of the particle च?

5 पुरा दूषयति स्थलीम् Point out the idiom here Give a similar example.

6 Account for the use of the locative, accusative and dative.

cases respectively in the following underlined words:—(a) सभाजने मे भुजं प्रयुङ्क्ते (b) अयोध्यामनु जलानि वहन्ति (c) अप्रबोधाय सुष्वाप.

7. Distinguish between :—नद and नदी, स्थल and स्थली.

VII 1. Kālidāsa does not indulge in any description of scenery on Rāma's way to Lanka but only on his return Can you point out any advantage in this mode of treatment?

2. What is Kālidāsa's explanation of spots in the moon?

3. ते चतुर्थसहितास्त्रयो बभुः. Do you notice any fault of composition here?

4. Explain the allusions in (a) शापयन्त्वितपौलस्त्यबलात्कारकचग्रहैः (b) अस्त्रमचलेप्यकुण्ठितम्.

5. Briefly indicate the legends suggested by—अङ्गदेश, सागर, विष्णुपदम्.

VIII. 1. Conjugate हा to abandon in लट् (present) and शासु in लङ् (imperfect).

2. Give the 2nd person singular imperative (लोट्) of रुद्; the third person singular perfect (लिट्) of विद् (वेत्ति) and हु (जुहोति); and the 3rd person singular aorist (लुङ्) of हा to abandon, हा to go, हु to sacrifice, कम् to desire, and जन् to be born.

WEDNESDAY, 18TH DECEMBER, 2 TO 5 P.M.

SANSKRIT: TRANSLATION.

I. Translate into English :—

1 रामे बाहुबलं विवृण्वंति धनुर्वंशे गुणारोपणम्
माभूत्केवलमात्मना तिलकिते वंशेऽपि वैकर्तने ।
आकृष्टं नितरान्तदेव न परं सीतामनोऽपि द्रुतम्

भङ्गस्तस्य न केवलम् क्षितिभुजाम्, दोस्तम्भदम्भस्य च॥

2. नूनञ्जनेन पुरुषे महति प्रयुक्तमागः परन्तदनुरूपफलं प्रसूते । कृत्वा रघूद्वहगतेः क्षणमन्तरायम् यद्भार्गवः परगतेर्विहतिम् प्रपेदे ॥

3. बभौ सदशनज्योत्स्ना सा विभोर्वदनोद्गता ।
निर्यातशेषा चरणाद्गङ्गेवोर्ध्वप्रवर्तिनी ॥

4. लक्ष्यते स्म तदनन्तरं रविर्बद्धभीमपरिवेषमण्डलः ।
वैनतेयशमितस्य भोगिनो भोगवेष्टित इव च्युतो मणिः॥

5. तं विनिष्पिष्य काकुत्स्थौ पुरा दूषयति स्थलीम् ।
गन्धेनाशुचिना चेति वसुधायाम् निचख्नतुः ॥

6. कामं जीवति मे नाथ इति सा विजहौ शुचम् ।
प्राञ्जत्वा सत्यमस्यान्तम् जीवितास्मीति लज्जिता ॥

7. ससत्त्वमादाय नदीमुखाम्भः सम्मीलयन्तो विवृताननत्वात् । अमी शिरोभिस्तिमयस्सरन्ध्रैरूर्ध्वं वितन्वन्ति जलप्रवाहान् ॥

8. सानुष्ठवः प्रभुरपि क्षणदाचराणां भेजे रथान्दशरथप्रभवानुशिष्टः । मायाविकल्पराचितैरपि ये तदीयैर्न स्यन्दनैस्तुलितकृत्रिमभक्तिशोभाः ॥

9. उत्तिष्ठ वत्से ननु सानुजोऽसौ वृत्तेन भर्ता शुचिना तवैव । कृच्छ्रं महत्तीर्ण इति प्रियार्हाम् तामूचतुस्ते प्रियमप्यमिथ्या ॥

10. किं वा तवात्यन्तवियोगमोघे कुर्यामुपेक्षां हतजीवितेऽ-

स्मिन् । स्याद्रक्षणीयं यदि मे न तेजस्त्वदीयमन्तर्गतं-
मन्तरायः ॥

11 उपस्थितविमानेन तेन भक्तानुकम्पिना ।
चक्रे त्रिदिवनिश्श्रेणिस्सरयूरनुयायिनाम् ॥

12. भवतामपराधविधायिनस्तस्य यातुधानस्य निधनमधुनैव विधातुम् शक्यम् । किन्तु सरसिजासनशासनमप्यमोघीकुर्वन्नुर्वीतले पुत्रीयतस्सुत्राममित्रस्य दशरथस्य मनोरथमपि पूरयितुमाहतमानुषवेषस्सन्नहमेव तम् वधिष्यामीत्युक्त्वान्तरधात् । ततस्सा परिषदनिमिषाणामुन्मिषितहर्षाणाम् हर्षाकेशादेशात् प्रशमितदुर्दशानि निर्दशाननानि चतुर्दशभुवनानि बुद्ध्वा दुग्धसागरान्निरगात् ॥

13. कामम् नृपास्सन्तु सहस्रशोऽन्ये राजन्वतीमाहुरनेन भूमिम् । नक्षत्रताराग्रहसंकुलापि ज्योतिष्मती चन्द्रमसैव रात्रिः ॥

14. उदेति पूर्व्वं कुसुमं ततः फलम् घनोदयः प्राक् तदनन्तरं पयः । निमित्तनैमित्तिकयोरयं क्रमः तव प्रसादस्य पुरस्तु सम्पदः ॥

15. उत्पत्तिपरिपूतायाः किमस्याः पावनान्तरैः ।
तीर्थोदकञ्च वह्निश्च नान्यतश्शुद्धिमर्हतः ॥

II. Translate into Sanskrit:—

1. O lover of truth, the supreme spirit ever resides in thy bosom, and is an all-knowing inspector of thy goodness or wickedness. Speak therefore in such a manner that you may not be at variance with that spirit.

2 The appointed span of life is one hundred years; one half

of this is spent in sleep and night; the greater part of the other half in childhood and old age; the rest is passed in service, sickness and mental anxiety. How can a human being find delight in such a life transient as a bubble of water?

3. Kavi, a descendant of Angiras, excelling in divine knowledge, taught the Veda to his elders addressing them "my little sons." Resenting this violation of propriety, the latter went to the gods to ascertain its meaning. The gods in a body answered thus:—'The boy has addressed you properly; for an unlearned man is in truth a child; he who teaches him the Veda is his father; holy sages have always said "child" to an unlearned man; and "father" to a teacher of divine knowledge. Greatness is not conferred by years, nor by grey hairs, nor by wealth, nor by powerful kindred. The divine sages have established the rule that he is great who possesses divine knowledge.'

4. There lived at Kanchi a learned man who got his livelihood by teaching a number of boys One day a lad came to him, and having expressed his desire to acquire knowledge, begged him for instruction in the arts and sciences. The learned man wishing to find out what abilities the lad possessed, asked him 'where god was.' The lad replied, I will answer you, if you will first tell me where he is not. The learned man, from his sensible reply, thought highly of the boy's understanding and according to his wishes, perfected him in his studies. Thus a wise man early announces a reflecting mind.

WEDNESDAY, 13TH DECEMBER, 10 A.M. TO 1 P.M.

LATIN: TEXT-BOOKS AND GRAMMAR.

I. 1. Give the nominative singular and gender of—fruticum, colubris, farre, sues, picis, antistitibus.

2. Account for the comparative forms in—entior in such words as 'malevolus,' and write down the other degrees of comparison of the adjectives antiquus, frugi, saluber, summus, and the adverbs audacius, maxime, nuper, tutius.

II. 1. Derive the following words and trace their meanings to their respective roots:—acies, anceps, armentum, examen, mollis, nefastus.

2. Point out clearly in the following the force of (*a*) the prefixes in debellare, perpopulatus, seductis, enaviganda, and (*b*) the suffixes in olivetum, fabulosus, flebilis, vivax.

3. In what sense is 'aviaria' used by Vergil, and 'dissociabilis' by Horace?

III. 1 Parse coaluerant, descivere, faxitis, metito.

2. Write down the perfect infinitive, active and passive, of the verbs from which the following come:—levi, dimicans, effingit, adfertur, and of the verbs compounded with *ad* and *nosco*, *ex* and *quæro*, *per* and *quatio*, *re* and *claudo*.

IV. 1. "A Roman of distinction had at least three names

Distinguish between them and give instances of 'cognomina derived from (*a*) personal peculiarities, (*b*) heroic deeds.

2. Express in Latin:—One man in ten; at my house; seven ounces of gold was the price agreed upon for each (man); 59 were taken alive; 2,800 of the enemy were slain; this is too good to be true; we were detained from the 3rd of June to the 12th September.

V. 1. Explain briefly the difference between civica corona, corona muralis; coloni, municipes; carcer, custodia; abrogare, subrogare.

2. Translate and explain with reference to the italicised words:—(*a*) Oceano propior *India*. (*b*) *Alienis* mensibus æstas. (*c*) *Ascræumque* cano Romana per oppida *carmen*. (*d*) *Velleraque* ut foliis depectant tenuia Seres.

VI. 1. Who was the joint patron of both Horace and Vergil? In what very similar terms do they both address him? How does Horace speak of Vergil.

2. Explain from the Odes—uxorius amnis—pellitis ovibus—Mercurialium virorum—Salaribus dapibus—criminosis iambis—bimaris Corinthi.

VII. 1. Name and define the figures of speech contained in the following:—

(*a*) Hic laticis, qualem pateris libamus et auro, ...

(*b*) Insanientis dum sapientiæ consultus erro, ...

What is the "*insaniens sapientia*" to which Horace alludes?

*2. (*a*) Scan the following, (*b*) name the metre, (*c*) point out any peculiarities of scansion or grammar:—

i. Si non tanta quies iret frigusque caloremque
Inter, et exciperet cæli indulgentia terras.

ii. Fatale monstrum: quæ generosius
Perire quaerens nec muliebriter
Expavit ensem nec latentes
Classe cita reparavit oras.

VIII. 1. Re-write the following in the form of Oratio Obliqua:—

"Ego quidem," inquit, "quam patriæ debeo pietatem, exsolvam patri. Tuam doleo vicem, cui ter proditæ patriæ sustinendum est crimen; . . . . . Tu, patria, ferrum, quo pro te armatus hanc arcem hostium inii, quoniam parens extorquet, recipe."

2. Substitute a correct prose construction for the poetical infinitive in the following:—

(*a*) Musis amicus tristitiam et metus
Tradam protervis . . . . . Portare ventis, ...

(*b*) Omne cum Proteus pecus egit altos
Visere montes.

IX. Translate into Latin:—

1. That victory cost the Carthaginians much blood.

2. He was to take care that they had no conversation with each other nor any means of communicating a plot.

3. The nearer Hannibal was to the hope of bringing the war to a close, the more they ought to assist him with all the means in their power.

4. The Roman commanders are such as can scarcely be resisted even if the forces be equal.

X. 1. Write brief explanatory notes on tergeminis honoribus—evocatorem servorum—vadimonia deserere—triplex stetit Romana acies.

2. Translate and explain the allusions:—

(a) Non aliam ob culpam Baccho caper omnibus aris
Caeditur et veteres ineunt proscaenia ludi,
Praemiaque ingeniis pagos et compita circum
Thesidae posuere, ...

(b) Neque Attali ignotus heres regiam occupavi.

XI. What may be learnt of the life and the home of Horace from the first two books of the Odes.

WEDNESDAY, 18TH DECEMBER, 2 TO 5 P.M.

LATIN: TRANSLATION.

I. Translate into English:—

1. Premant Calena falce, quibus dedit
Fortuna, vitem: dives et aureis
Mercator exsiccet culullis
Vina Syra reparata merce,
Dis carus ipsis, quippe ter et quater
Anno revisens æquor Atlanticum
Impune. Me pascant olivæ,
Me cichorea, levesque malvæ.
Frui paratis et valido mihi,
Latoë, dones, et, precor, integra
Cum mente; nec turpem senectam
Degere, nec cithara carentem.

2. Auream quisquis mediocritatem
Diligit, tutus caret obsoleti
Sordibus tecti, caret invidenda
Sobrius aula.
Sæpius ventis agitatur ingens
Pinus, et celsæ graviore casu
Decidunt turres, feriuntque summos
Fulmina montes.
Sperat infestis, metuit secundis
Alteram sortem bene præparatum
Pectus. Informes hiemes reducit
Iupiter, idem
Summovet.

3. Sed neque Medorum, silvæ ditissima, terra,
Nec pulcher Ganges, atque auro turbidus Hermus,
Laudibus Italiæ certent; non Bactra, neque Indi,
Totaque thuriferis Panchaïa pinguis arenis.
Hæc loca non tauri spirantes naribus ignem
Invertere, satis immanis dentibus hydri;
Nec galeis densisque virum seges horruit hastis;

Sed gravidæ fruges et Bacchi Massicus humor
Implevere.

4. Sollicitant alii remis freta cæca, ruuntque
In ferrum, penetrant aulas et limina regum;
Hic petit excidiis urbem miserosque penates,
Ut gemma bibat, et Sarrano dormiat ostro;
Condit opes alius, defossoque incubat auro;
Hic stupet attonitus rostris; hunc plausus hiantem,
Per cuneos geminatus enim plebisque patrumque
Corripuit; gaudent perfusi sanguine fratrum,
Exsilioque domos et dulcia limina mutant,
Atque alio quærunt patriam sub sole iacentem.
Agricola incurvo terram dimovit aratro.

5. O conditionem miseram non modo administrandæ, verum etiam conservandæ reipublicæ! Nunc, si L. Catilina, consiliis, laboribus, periculis meis circumclusus ac debilitatus, subito pertimuerit, sententiam mutaverit, deseruerit suos, consilium belli faciundi abiecerit, ex hoc cursu sceleris et belli iter ad fugam atque in exsilium converterit: non ille a me spoliatus armis audaciæ, non obstupefactus ac perterritus mea diligentia, non de spe conatuque depulsus, sed indemnatus, innocens, in exsilium eiectus a consule vi et minis esse dicetur; et erunt qui illum, si hoc fecerit, non improbum, sed miserum; me non diligentissimum consulem, sed crudelissimum tyrannum existimari velint.

6. Hic tu qua lætitia perfruere? Quibus gaudiis exsultabis? Quanta in voluptate bacchabere, cum in tanto numero tuorum neque audies virum bonum quemquam, neque videbis? Ad huius vitæ studium meditati illi sunt qui feruntur labores tui ... Habes ubi ostentes illam præclaram tuam patientiam famis, frigoris, inopiæ rerum omnium, quibus te brevi confectum esse senties.

7. Postremo ad id ventum inopiæ est, ut lora detractasque scutis pelles, ubi fervida mollissent aqua, mandere conarentur, nec muribus aliove animali abstinerent, et omne herbarum radicumque genus aggeribus infimis muri eruerent. Et quum hostes obarâssent quidquid herbidi terreni extra murum erat, raporum semen iniecerunt, ut Hannibal "Eone usque, dum ea nascantur, ad Casilinum sessurus sum"? exclamaret: et, qui nullam antea pactionem auribus admiserat, tum demum agi secum est passus de redemptione liberorum capitum.

8. Hannibalem pater filio meo potui placare, filium Hannibali non possum? Sed sit nihil sancti, non fides, non religio, non pietas; audeantur infanda, si non perniciem nobis cum scelere ferunt. Unus adgressurus es Hannibalem? quid illa turba tot liberorum servorumque, quid in unum intenti omnium oculi, quid tot dextræ—torpescentne in amentia illa?

(*Not from text-books.*)

9. Unum ex legatis Scytharum, maximum natu, ita regem Alexandrum allocutum esse accepimus. "Quid nobis tecum est? nunquam terram tuam attigimus. Qui sis, unde venias, licetne igno-

rare in vastis silvis viventibus? Nec servire ulli possumus, nec imperare desideramus. Dona nobis data sunt, ne Scytharum gentem ignores: iugum boum, aratrum, et sagitta, et patera. His utimur cum amicis, et adversus inimicos. Fruges amicis damus, boum labore quæsitas; patera cum iisdem vinum diis libamus; inimicos sagitta eminus, hasta cominus petimus. At tu, qui te gloriaris ad latrones persequendos venire, omnium gentium, quas adisti, latro es."

II. Translate into Latin:—

All this while the people of Calcutta were overpowered with joy. They had been humiliated to the dust and stripped of all their possessions; but Clive had avenged the insult to the English name, and raised them from poverty to riches. Boats, loaded with gold and other precious metals, arrived at Calcutta every day, and, for the moment, the city was elevated to the seventh heaven of felicity. Former enemies greeted one another like friends and brothers. The sack of the town passed away like a hideous dream, and the name of Clive was glorified from the Indian shores to the British Isles.

WEDNESDAY, 18TH DECEMBER, 10 A.M. TO 1 P.M.

ARABIC: TEXT-BOOKS AND GRAMMAR.

I. Explain:—

(١) أكاتبكم والقلب فيه من النوى * بلابل قد اودت بحالي الى الحتف

(٢) وصرت كحرف المد لازم علة * وعاقبة الاعلال فيه الى الحذف

(٣) كلا مك علم السكر الحميا * لذا لعبت بالباب الرجال

(٤) ثم ان سالتم عن احوال طرفنا فهي ساكنة غير ساكنة (٥) ما لكم عدد كادث وحادث (٦) الذ من ضرب رضاب البهكنات *

1. Rewrite (٢) and (٣) marking the vowel-points (اعراب)*

2. Parse fully the underlined words.

II. What are the qualifications necessary for an ambassador? Write a short account of * اصحاب فيل - ها بيل و قا بيل

III. Give the English meanings of the following words and phrases:—

حنق - وثبات - روغان - لصوصة - بصبصة - سويق - دجاجة - تخرخر - سارح الهيم - البيل المكرور - العصفور الشبق - الجنا حين المحد و دب - نوب الزمان - سمعا و طاعة - زعماء الانس - عليظ القرون *

IV. Explain clearly the formation of :—

1. الاسماء المنسوبة and افعال التعجب *

2 the diminutives of proper nouns composed of two words.

V. 1. Define and illustrate :—

معرب - مبني - تمييز - حال - مسند اليه - مسند به - بدل - نعت *

2. Mention :—(a) the different kinds of معرب and جامد *

(b) the تعليل of قائم - قيل - اطلاع - اضافة - داع - ق - نعن - ترمي - *

(c) the cases in which مضارع is used as مجزوم or منصوب *

VI 1. Name :—

حروف الحلق - الافعال الناقصة - حروف الجر - حروف مشبهة بالفعل *

2. Give examples of :—

(a) Verbs signifying "to be" which require the accusative case after them

(b) اسماء المدح والذم - اسماء الالة - اسماء النوع - اسماء الظرف *

(c) Some Arabic "forms" of common gender.

(d) Some feminine adjectives of the form فُعلى which are not of superlative degree and have no corresponding masculine forms.

(e) Words having the force of prepositions which require the genitive case after them

VII 1. Decline ذا

2. With what forms is a verb in Arabic made subjunctive?

3 What are the two ways in which the numerical adverbs once, twice, thrice, &c, expressed in Arabic?

VIII. 1 How does a نكرة become a معرفة ?

2. What is the name of the article ال ? Point out the meaning of its letters

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WEDNESDAY, 18TH DECEMBER, 2 TO 5 P.M.

ARABIC: TRANSLATION.

I. Translate into Arabic :—

A Brahmin went to the market to buy a goat. Three thieves saw him carrying it on his back, and formed a plan to get the goat to themselves. They stationed themselves at intervals on the road along which he had to travel When the Brahmin approached, the first thief said. "Why do you carry a dog on your back? are you not ashamed?" He said this, because a holy man like the Brahmin would obe polluted by touching any unclean animal, such as the dog. The

Brahmin replied "It is not a dog, it is a goat" A little while after he met the second thief, who said "Brahmin, why do you carry a dog on your back? are you not ashamed?" The Brahmin felt perplexed put the goat down, and examined it But finding it all right, he took it up again and walked on He was soon stopped by the third thief, who put the same question to him as the other two The Brahmin became frightened, threw down the goat, and went to perform his ablutions for having carried, as the three rogues had now made him believe, an unclean animal The thieves took the goat and ate it, laughing all the time at the simplicity of the Brahmin who was so easily imposed upon

II Translate into English —

1 خيالك في الذاهب والذاهي * وشخصك ليس يبرح عن عياني
وحبك في الجوانح مستكن * وذكرك لا يفارق لساني
مولاي الاخ الامجد * اللوذعي الاوحد * صفوة الكرام
وتحفة السادة الاعلام جمال الدين والاسلام فلان بن فلان
سلمه الله تعالى واحسن اليه واسبغ نعمة الوافرة عليه -
والسلام على ذلك الجناب ورحمة الله وبركاته
وغفرانه * اما بعد حمد الله الذي رفع السماء بغير عمد -
والصلوة والسلام على افضل من ركع وسجد * واله وصحبه
اولي الرشد * فانه وصل الكتاب المنصف للعارة الفائقة
والنزهة الرائقة - وكلما سرحنا في فقراته اندى لنا ما يحير
الافكار بغرائب اشعاراته * هذا وقد فهم الحقير ما ذكره مولاي
من الاحتفار الذاتية على تحرك الاسعار وفلاح التجار وحصول
الارباح فيما لديكم من الحديد والالواح - فالله جل شانه
المسؤل ان يزيدكم عن فضله ويعطيكم فيما ترومون تحوله *
وفي هذه الايام بلغنا انكم اشتريتم عنجة المحب نساس وتعلم
السندوق الذي احد ثمرة سابقاً من ذلك المعروف بالحناس
فلعل في ذلك الخير انشاء الله تعالى * ولا تنسونا من مكاتباتكم
السارة ونحن كذلك وما عرفناكم به في الحاوي فليس على
ظاهره وما ملوه واياديكم الظاهرة مقبلة والسلام *

2 قال الملك للذي مدد مني اسنا مدت الكلاب والسنا نبر
الي الانس - قال مدد الزمان الذي تظاهرت فيه تبوفا بيل علي
مدي هابيل - قال كيف ذلك الخير حدثناه - قال اما قتل قابيل

اخاه هابيل طلب بنو هابيل لبني قابيل - ثار ابيهم واقتتلوا ونذا بحوا واستظهرت بنو قابيل على بني هابيل وهزموهم ونهبوا اموالهم وساقوا مواشيهم من الاغنام والبقر والجمال والخيل والبغال واستغنوا فاصلحوا الدعوات والولائم وذبحوا حيوانات كثيرة ورموا برؤسها وكوارعها حول ديارهم وقراهم - فلما رأتها الكلاب والسباع ترعبت في كثرة الريف والخصب ورغد العيش قد اخلتهم وفارقت ابناء جنسها وصارت معهم معينة لهم الى يومنا هذا *

3 امراة كانت لها دجاجة تبيض في كل يوم بيضة فضة - وقالت الامراة في نفسها ان انا كثرت علفها تبيض في كل يوم بيضتين - فلما كثرت علفها اشتقت حوصلتها فماتت - هذا معناه - ان ناساً كثيراً بسبب ربح يسير يهلكون رؤس اموالهم *

WEDNESDAY, 18TH DECEMBER, 10 A.M. TO 1 P.M.

PERSIAN: TEXT-BOOKS AND GRAMMAR.

I. Paraphrase :—

(۱) بعد ازینم نبود شائبه در جوهر فرد
که دهان تو درین نکته خوش استد لا لیست

(۲) فرق است زاب خضر که ظلمات جاے اوست
تا آب ما که منبعش الله اکبر است

(۳) نه نیم جو بخرم طاق خانقاه و رباط
مرا که مصطبه ایوان و باے خم طنبي است

(۴) مردم خنجر گذار دیدهٔ فدان دلبران تا کمان سیه توز ابرو و نبر دلدوز مژگان قلب شکني و قیقاج اندازي کند (۵) مرورا مطرح فروغ ماهچهٔ لواے خورشید ضیا ساخته (۶) چشم مردم قرصي براے نهاري سواے پنجه کش خورشید نمي یافت - اگر دانهٔ ارزنے مي جستند رفیق را بیٔ بخود سیاه مي فرستادند (۷) مانم

ردگان هنوز در ماتم کشتگان خویش بر اوتار سینهٔ ریش بمضراب
ناخن چنگ زن - و از خور افغان تا نفیر نالهٔ و افغان در گوش
روئین فلك خروش افگن بودند - و دل سوختگان طاق نمای
دل را از استخوان سینه چوب بندی نموده و از لالهاے داغ طرح
چراغان میریختند (۸) بعد از چهل روز حضرت ظل اللهي
بدار نشاط حزن و نکل و تاسیٔ فرع باصل در اصفهان تکمیل خلعت
سلطنت و افاضهٔ صورت نوعیهٔ تشخیص مملکت فرمودند *

II 1 When and under what circumstances was the Tarikh-i Nadiri written? Wherein does it differ from ordinary histories? What was the inscription on the coins which Nadir Shah introduced into his conquered territories?

2 Prove the following statements —(a) "There is much suffiestic teaching in the poems of Háfiz" (b) "Fortune always favoured Nadir Sháh"

3 Narrate in Persian the incidents of the life of Háfiz recorded in each of the following couplets —

(a) حافظ نه علامیست که از خواجه گزیرد
لطفي کن و بار آکه خرابم زعنایت

(b) اے عذر از نظر که شدي همنشین دل
مدگو نمت دعا و ثنا مي فرستمت

(c) بس آسان مي نمود اول غم دریا بنوے در
غلط کردم که یک موجش بصد گوهر نمي ارزد

III. 1 Explain the allusions in —

(۱) عدو که منطق حافظ طمع کند در شعر
همان حدیث همای و طریق خطا فست

(۲) ای شاهد قدسي که کسد بدهٔ نقابت
وی مرغ بهشتي که دهد دانه و آبت

(۳) حدیث مدعیان و خیال همکاران
همان حکایت زر دور و بوریا باف است

(۴) وقت آن شیرین قلندر خوش که در اطوار سیر
ذکر تسبیح ملک در حلقهٔ زنار داشت

2 Give the esoteric meanings of —

(۱) بنوي نافهٔ کاخر صبا زان طره بکشاید
زتاب جعد مشکینش چه خون افتاد در دلها

(۲) شب تاریک و بیم موج و گردابي چنین هائل
کجا دانند حال ما سبکساران ساحل ها

(۳) از خیال لطف می مشاطهٔ چالاک طبع
در ضمیر برگ گل خوش مي کند پنهان گلاب

3. Criticise or justify :—

(۱) معشوقه عیان میگذرد بر تو و لیکن
اغیار همي بیند ازان بسته نقاب است

(۲) رضا بداده بده و از جبین گره بکشاي
که بر من و تو در اختیار نکشاد است

IV. Give :—1. Some forms of expression in the Tarikh-i-Nadiri which are now more or less obsolete.

2. The English equivalents for

طره - سنبل - نرگس - غبغب - عقیق - بنفشه

3. The Persian words for :—Eternity, ecstacy, mirage, wages, temperance, cheque, good morning, swallow.

4. The special rules as to the pronunciation of the واو عطف in a phrase or sentence.

V. 1. Quote from Háfiz :

(a) the couplets which express the same thoughts as the following :—

"خال تو دانه دانه و زلف تو دام دام
مرغی که دانه دید گرفتار دام شد"

"A bird in hand is worth two in the bush"

(b) the couplet which Nadir considered a good omen for his invasion of Tabriz.

2. How does the author of the Tarikh-i-Nadiri express the following :—(a) They besought the protection of Nadir Shah (b) The sun sprang from the east. (c) The besiegers yielded.

3. Who is meant by - جناب ظل اللهي - سلطان دار القرار ابلا - سیه چرده - لسان الغیب and why ?

VI. Distinguish between :—

خُوْي و خَوي - آراستن و پیراستن - آزرم و آرزم - خیال و خَیال *

2. Trace the connection between the primary and the secondary meanings of :— کتخدا - فرزند - داماد *

3. What kind of اضافت is in قلب دل ?

عاشق مفلس اگر قلب دلت کرد نثار

4 Re-write in prose order :—

(۱) سر گیسوی تو در هیچ سري نیست که نیست

(۲) کي توان گفت که بر داغ دلم صابر نیست

(۳) ای بادشاه حسن خدا را بسوخنیم

بارے سوال کن که گدا را چه حاجت است

VII. Point out the صنائع and لطائف شعري in :—

(۱) یقه دلي که بود مرا صرف باده شد

قلب سیاه بود ازان در حرام رفت

(۲) ماهم این هفته شد از شهر و بچشمم سالیست

حال هجران تو چه دانی که چه مشکل حالیست

(۳) در چمن باد بهاري زکنار گل و سرو

بهوا داريء آن عارض و قامت برخاست

(۴) بر من از خانهٔ نقوی بدر افتادم و بس

پدرم نیز بهشت اند از دست بهشت

(۵) اشک غماز من ار سرخ بر آمد چه عجب

خجل از کردهٔ خود برده دري نیست که نیست

(۶) من و باد صبا مسکین و سرگردان و بیحاصل

من از افسون چشمت مست و او از بوی گیسوئت

VIII. Write short notes in Persian on each of the following :—

ملک لطف علي - فاطمه سلطان بیگم - رضاقلي مرزا - عراق - معیر الممالک - تکوزئیل *

WEDNESDAY, 18TH DECEMBER, 2 TO 5 P.M.

PERSIAN : TRANSLATION.

I. Translate into Persian :—

1. As a general rule the lion is no open foe. He does not come boldly out on the plain and give chase to his prey, for he is by no means swift of foot, and has no idea of running into danger without adequate cause. He can make tremendous leaps, and with a single blow from his terrible paw can crush any of the smaller animals. So, he creeps towards his intended prey, availing himself of every bush and tree as a cover, always taking care to advance against the wind so that his peculiar odour should give no alarm, and when he has arrived within the limits of his spring leaps on the devoted animal and strikes it to the ground.

If the lion has been prowling about during the evening hours and has found no prey, he places his mouth close to the earth, and utters a terrific roar, which rolls along the ground on all sides, and frightens every animal which may chance to be crouching near. Not knowing from what direction the fearful sound has come, the animals leave their lairs, and rush frantically about, distracted with terror and bewildered with the sudden arousing from sleep. In their heedless career, one or two will probably pass within a convenient distance of the lurking foe.

2. (*a*) The goldsmith melted my gold, took away the dross and poured the pure metal into a mould.

(*b*) When we came near the port, the captain ordered the lead to be cast that he might know the depth of the water.

II. Translate into English:—

1. از انجا که نقش بند کارگاه وجود ربط و پیوند مزاوجت را تار و پود دیبای بقای بني آدم ساخته - و باین جنس اکسون طراز جامهٔ قوام و دوام بر بر و دوش نوع بشر انداخته - تجرد مخصوص خداوند صمد است و تفرد شایستهٔ ایزد یگانهٔ الذي لم یلد و لم یولد ولم یکن له کفواً احد - حضرت ظل اللهی را دران آوان که آغاز شباب و جواني و بهار گلزار زندگاني و هنگام ریعان ریحان عیش و کامراني بود مائل تاهل گشته *

مع هذا اواغذ از بیم جان متهاجم و جمعي از غلبهٔ خوف در آب غرق گشته متاع هستي را بباد داده دو سه هزار از اطفال خرد سال و شیر خواره را با بسیاري از زنان دران ظلمت لیل که روز نامهٔ بوم یفر المرء من اخیه و امه و ابیه و صاحبته و بنیه بود انداخته سالک طریق اَیْنَ الْمَفَرّ شدند - و قراولان سر و زندهٔ بسیار بدست آوردند *

بعد از انتظام مهام آن سرزمین کوکبهٔ سنگین بجانب سنگان نهضت کرده - سه روز قریهٔ اسفندین مخیم سر ادقات عز و تمکین گشته - روز رابع بر ترتیب هراول و نیپ و انضباط لشکر قیامت نهیب و تعقین ساقه و جوانغار و آرایش طرح و برانغار برداخته وارد مامزن آباد - و بسبب اینکه مابین آنمکان و زیر کوه ریگ بوم بود توپخانه در ریگ نشست -

2 یار مردان خدا باش که در کشتیٔ نوح
هشت خاکی که بآبی نخرد طوفان را
یارب این با که توان گفت که آن سنگین دل
کشت ما را و دم عیسیٔ مریم با اوست
آنچه زر می شود از پرتو آن قلب سیاه
کیمیائی است که در صحبت درویشان است
گنج قارون که فرو می رود از قعر هنوز
خوانده باشی تو که از غیرت درویشان است
گر بادم شدن سوی هاروت بابلی
صد گونه ساحری بکنم تا بیارمت
ای دلربین بسر تو چه مذهب گرفته
کت خون ما حلال تر از شیر مادر است
فقیه مدرسه دی مست بود و فتوی داد
که می حرام ولی به ز مال اوقاف است
علاج ضعف دل ما بلب حوالت کن
که این مفرح یاقوت در خزانهٔ تست

3 (۱) این اسب سم بند می کند (۲) نفست نگیرو ده برو (۳) از جهت اینکه دزدان اطاق آن تاجر را بربده بودند داروغه حکم کرد که چند گزمه بگردد (۴) از هوای دیشب من چاهش کرده ام (۵) درین دوات یک چکهٔ مرکب هم نیست (۶) او حنلی تمثل است و همیشه کش و قوس می کند (۷) قاطبهٔ مردم از فلان حساب می برند (۸) امروز در خانهٔ حاکم شرع مرافعهٔ من است *

4 دیوانه می کنی دل و جان خراب را
مشکن بناز سلسلهٔ مشک باب را
بیجرم اگرچه ریختن خون بود وبال
تو خون من بریز برای ثواب را
طوفان نشان دو دیده و قحط وفا بدهر
تعویم حکم کی کند این فتح باب را

آفت جمال شاهد و ساقي است بيهده
بدنام کرده اند بمستي شراب را
خوننابه مي چکاندم از ديده سوز دل
خوش گريه ايست برسر آتش کباب را

WEDNESDAY, 18TH DECEMBER, 10 A.M. TO 1 P.M.

URDU: TEXT-BOOKS AND GRAMMAR.

I. نظم و نثر ذيل کا خلاصه سليس عبارت مين رقم هو—

(۱) انوٹهي نهو کيونکر اسکي کلي
نسائيت اسکي ہے بو مين بهري

(۲) چوسے تو لب کهل نه سکين بار بار
کاٹے اگر بند چهري کيه هو دهار

(۳) سفيده سحر کا جو حل هو کے آئے
صباحت ذرا تب اسکي لکهي جائے

(۴) اسلئے معشوقون کے ہي منه چڑہا
رنگ سے دے عاشقون کے خون بها

(۵) کهائينگے زهر انکے خط سبز فام پر
سرسبز هونگے خضر عليه السلام پر

(۶) سوزن طمع نے اسکي مروّت سي دي (۷ شيش ناگ کہ حامل زمين انکے عندئے مين ہے اسنے اسکي شرح کي ہے (۸) هرچند اسکے وقت بهي اوٹهتي پينٹهه کا سا عالم رہا پر احمد شاہ کے عصر مين تو نبيڑا هي گيا (۹) عابد صد سالہ اسکے ساغر چشم کو ديکهتے هي خراباتي هو جائے اور زاهد کهنه سال سومناتي (۱۰) حلاوت اسکي ناشپاتي کو بهيکا کرے رنگ پر اسکي بهي ٹپک پڑے (۱۱) بٹول کا کولا سب طرح سے اولا ہے اسکے هوتے کوئي انهين دستوري مين بهي نه لے (۱۲) بنابر اسيکے اسارهه کے ڈونگرے ساون کے جهڑيان بهادون کے ڈريرے مشهور هين *

1 کسي بالا مذکور بيت کي تقطيع کيجئے اور اسکا بحر بهي بتلائے *

2 پہلي بيت کي ترکيب اور چودھويں فقرے کي ترتيب (parsing) کيجئے *

II 1 اہل ہند کے قول سے دنيا کي پيدايش کسطرح ہوئي ؟ دنيا کے پہلے کونسا عنصر تھا ؟ اور واسطہ پيدايش کا کون ؟

2 کونسي کتابين ويد سے اخذ کئي گئين ؟ ہنود کے فرقے اور آئين مذہبي کونسي ہين ؟

3 قديم زمانے مين اہالي ہند کسطرح وقت دريافت کرتے تھے اور کس قسم کي گھڑي اُنہونون ايجاد کئي گئي تھي ؟

4 تناسخ کي تردید مين کوئي دليل تمہاري درسي کتاب سے رقم ہو *

5 جوگيون بيراگيون اور سنياسيون کے فرقون مين کيا فرق ہے ؟

6 سالار مسعود غازي کے حال مين کيا اختلاف ہے ؟

III 1 الفاظ مرقوم الذيل کے معنے انگريزي مين لکھئے —

حالت کدائي - علم الٰہي - علم طبعي - گلوري - بيرا کھيري - موگري - سريٹ پھينکنا - سيوا کرنا - آستت - خال خال - حرف عادت - بچھ تچھ - تفنن طبع - پچھمين بسنت - تاسلوب سلطنت - اژدہات *

2 اِن الفاظ مرکبہ کے اجزا معہ معاني رقم ہون —

تربولنا - کلکنہ - بکدتي - کھت ساسر - ماہدت بارہ دري - بت ناہري - جامداني *

IV. 1 صرب الامثال ذيل کي تشريح کيجئے —

(۱) دعاے درويشان رحم الله قدم درويشان رد بلا (۲) يکے نقصان مايہ و ديگر شماتت ہمسايہ (۳) جاگا کام تاہي کوچھا جے (۴) جوگي کس کے ميت (۵) دل سريکھا باہنا ملے تُہ دوحدي دار (۶) برگ سبز است تحفۂ درويش (۷) شرف المکان بالمکين (۸) والله اعلم بالصواب *

2 لکھئے ۰ (۱) خانخان کے بل کے تناکاسن (۲) مادۂ تاريخ

جون پور کے پل کا (۳) سن جو اِس مادہ سے ظاہر ہوتا ہی :—
"مسجد جامع الشرق" *

1 V. ہر ایک دو لفظ مرقوم الذیل مین —

(۱) کس قسم کا سجع ہی :— مال و منال - مراتب و مراسم - گل و مل *

(۲) کس قسم کا قلب ہی :— یار و راے - رشک و شکر - شاباش *

(۳) کس قسم کي تجنیس ہی :— شراب و شرار - جمال و مال - مہر و مُہر - بازآر و بازار - ظل ہما و ظلہما *

2 محاسن سجع کیا ہین اور رکاکت سجع کونسی ہے

3 مرقوم الذیل الفاظ کے جوڑے اور اضداد رقم ہون :—
دنیا - غنا - عافیت - صعود - ثواب - امن - ایمان - حیات *

1 VI. ہر ایک دو مین کیا فرق ہی :— اقتباس - تلمیع - لف و نشر و تقسیم - استتباع و ادماج - ایہام و ادماج - سجع و قافیہ - ردیف و قافیہ *

2 انکے اقسام مثالون کے ساتھہ تحریر ہون :— مبالغہ - حشو - مجاز - تمیز *

3 باعتبار وجہ شبہ کے اقسام - اور باعتبار مستعار لہ و مستعار منہ کے استعارہ کے اقسام لکھئے *

WEDNESDAY, 18TH DECEMBER, 2 TO 5 P.M.

URDU: TRANSLATION AND COMPOSITION.

I. Translate into Urdu:—

1. The young of all animals appear to me to receive pleasure simply from the exercise of their limbs and bodily faculties, without reference to any end to be attained, or any use to be answered by the exertion. A child, without knowing anything of the use of language, is in a high degree delighted with being able to speak. Its incessant repetition of a few articulate sounds, or perhaps of the single word which it has learned to pronounce, proves this point clearly. Nor is it less pleased with its first successful endeavours to walk, or rather to run—which precedes walking—although

entirely ignorant of the importance of the attainment to its future life, and even without applying it to any present purpose.

2. It was our improved steam engine, in short, that fought the battles of Europe, and exalted and sustained, through the late tremendous contest, the political greatness of our land It is the same great power which now enables us to pay the interest of our debt, and to maintain the arduous struggle in which we are still engaged [1819], with the skill and capital of countries less oppressed with taxation But these are poor and narrow views of its importance It has increased indefinitely the mass of human comforts and enjoyments; and rendered cheap and accessible, all over the world, the materials of wealth and prosperity. It has armed the feeble hand of man, in short, with a power to which no limits can be assigned; completed the dominion of mind over the most refractory qualities of matter; and laid a sure foundation for all those future miracles of mechanic power which are to aid and reward the labours of after generations

3 Oh that you had told me sooner!

4 The animals were tied by the neck to a beam.

II. Translate into English —

1 راجا حد شترے بھي اپنے خويش و اقربا يار و مددگار
کو فرمانرواے ممالک سے طلب کئے - تھوڑے دنون مدن سرداران
نامدار بيشمار کروڑون پيادے لاکھون سوار بلکہ ترے ترے
ديو دت راوت مہدت سور ساونت اسداہ جنگي و تحملات حربي
ساتھہ لئے دونون طرف آکر جمع ہوے - قصہ کوتاہ کور کھيت کا
ميدان کہ اب وہ تھانيسر کرکے مشہور ہے ہندؤن کے نزديک
قديم تيرتھہ اور بڑا معبد ہے - بلکہ علما انکے کہتے ہين کہ برہما
اسي جاگھہ محض خدا کي قدرت سے بدواسطہ گل نيلوفر سے
پيدا ہوا اور خالق حقيقي کے حکم سے اس عالم کون و فساد
کو اس نے خلق کيا - انھون نے بھي سمجھکر رزم گاہ و ميدان
چاليس کوس کے عرصے تلک مقرر کي - پھر طرفين سے سوار
و پيادے کے غول کے غول اور غٹ کے غٹ ترے کے ترے نمود
ہوے - گرد و غبار اسقدر اُڑا کہ زمين و آسمان نظر آنے سے
رہگيا - کوس حربي کي آواز بلند ہوي اور طبل جنگي کي صدا
بہم آنے لگي - نقيب پکارنے لگے - اور کرکھيت لوکارنے - سور
ساونت ہتھيار سجنے لگے - اور مارو ہر طرف بجنے لگے - دوں

صوردم کي صدا سے رعد تھرا اُٹھا - اور بہادرون کے نعرے
سنکر جلاد فلک کانپ گیا *

2 نہ کیون کیفیت اشراق ہم مستونکو حاصل ہو
ہر ایک خم اپنے میخانے مین سینہ ہے فلاطون کا
بلند و پست عالم ایک ہے چشم حقیقت مین
حصیر فقر ہمپایہ بنا تخت فریدون کا
دکھلائینگے تجھے ہم داغ جگر کا عالم
منہہ اس طرف کبھي تو ای آفتاب ہوگا
اللہ رے اونکا غصہ ہاتنا نہین سمجھتے
کیونکر کوئي جئے گا جب یون عتاب ہوگا
کولہو مین گردش نگہ یار سے بسا
تل تیل ہوے بہگیا چشم غزال کا
روتے روتے چشم نابینا ہوے
یہ کنوان توتا نو اندھا ہو گیا
ہو گیا مین قتل اونکا نام لیکر پیار سے
مجھکو سیفي یار کا اسم جمالي ہو گیا
دل ہے غذاي رنج جگر ہے غذای رنج
پیدا کیا ہے مجھکو خدا نے براے رنج
آدم سے باغ خلد چھٹا مجھہ سے کوی یار
وہ ابتدای رنج تہي یہ انتہای رنج

3 (۱) ترازو کے پلے برابر نہین اور کانٹا سیدہا نہین کھڑا رہتا ہے - مین سمجھتا ہون کہ لکڑي ایک طرف موٹي ہے اسلئے پاسنگ ضرور ہے (۲) یہان میري دل بہلائي نہین ہوتي اور اکثر مزاج بے حظ رہا کرتا ہے - مین سمجھتا ہون کہ تبدیل ہوا نفربح طبع کے لئے مناسب ہے (۳) مزاج تو ایک طرف - تم اسکو سمجھا بجھا کر راہ پر لاؤ - اگر تم اور چندے اسطرح اُسکو چپ چھوڑ دیوین تو پھر اسکو سدہارنا دشوار بلکہ ناممکن

ہوگا (۴) آدمي کو چاهئے کہ کسي کام مين عجلت نکرے۔ بلکہ تامل اور تاني کو عادت کرے کہ مضار تعجيل کے بسيار اور منافع صبر و سکون کے بيشمار هين *

III. Write an Essay in Urdu on "*The covering of animals.*"

پوشش حيوانات کا بيان بزبان اُردو تحرير کيجئے :—

WEDNESDAY, 18TH DECEMBER, 10 A.M. TO 1 P.M.

TAMIL: TEXT-BOOKS AND GRAMMAR.

I. 1. நாலடியார், பாரதம், இவை எவ்வகை நூல்கள்? இவற்றில் முந்தின நூலெது?

2. நாலடியாரை அதிகாரங்களாக வகுத்து உரையெழுதினவர் யார்? அதற்குமுன் எப்படியிருந்தது? நாலடியார் என்பதில் ஆர் விகுதிவந்ததற் கிலக்கணங் கூறு.

3. பாரதத்துக்கு முதனூல் செய்தவர் யார்?

II 1. வைகலும் வைகல் வரக்கண்டு மஃதுணரார்
வைகலும் வைகலை வைகுமென்றினபுறுவர்
வைகலும் வைகற்றம் வாழ்நாண்மேல் வைகுதல்
வைகலை வைத்துணராதார்.

2. சூலுடையமந்தியசை வுற்றதுயர் தீரக்
காலுடை நெடுங்கடுவன் வார்கழை நறைத்தேன்
மாலைவரி வண்டிரிய மோதிவழை யிலையில்
கோலியதன் வாயிடை கொடுத்திடுவ தொருசார்.

முதற்பாட்டிற்குப் பொழிப்புரையு மிரண்டாம் பாட்டிற்குப் பதவுரையு மெழுதுக.

III. 1. பாம்பின்தலை நக்கியன்ன துடைத்து - யாது?

2. ஏதிலாரின்சொலிற் றீதாமோ? எது?

3. விலங்கிற்கும் விள்ளலரிது. ஆதலா லென்னசெய்ய வேண்டும்?

4. நாய் கடித்தால் கூடக்கடிக்கிறதா? இக்கருத்தமைந்த பாட்டை நாலடியிலிருந்தெழுதுக.

5. அறன்வலி யுறுத்தல் - எனனு மதிகாரத்தில் இரண்டு செய்யுட்களின் பொருளையெழுதுக.

6. சத்தம், சோதிடம், இவைகளைப்பற்றி நாலடியில் என்ன சொல்லியிருக்கின்றது?

7. சேர்ப்ப, நாட, இவையென்ன அடைமொழிகள் பெற்று நாலடியாரில் வருகின்றன?

8. பின்வரும் மொழிகள் நாலடியாரில் என்னபொருள் தருகின்றன?

கடிஞை, ஆண்டை, வம்பலன், துச்சாரி, அற்றம், பைம்மறி, மீக்கூற்றம், துப்புரவு.

IV. பின்வருந் தொடர்களுக்கு அர்த்தமெழுதுக: அவை யார் யாரைக் குறிக்கின்றன?

1. நிறுத்திடு துலையோடொப்பான்.
2. மதனை முன்ன ொரித்திடுஞ் சிவனைப்போல்வான்.
3. தழற்கடவுள் தந்தவொரு தோகை.
4. சங்கரன் றன் சகாயன்.

V. 1. பரவா வெளிப்படா பல்லோர்கட்டங்கா
உரவோர்கட் காமநோயோ ஒ கொடிதே.—இதில் என்ன வழுவமைதி வந்திருக்கின்றது? இதைக்குறித்த நன்னூற்சூத்திர மென்ன?

2. இரட்டைக் கிளவிக்கும் அடுக்குத் தொடருக்குமுள்ள வித்தியாசமென்ன? உதாரணத்துடன் விளக்க.

3. உழுநர், உணராதார், யாக்கை, வாழ்தி - இவற்றுக்குப் பகுபத இலக்கணங் கூறுக.

4. பின்வருஞ் சொற்களுக்கு உற்பத்தி யர்த்தமென்ன? கட்செவி, உரகம், கரி, ஆதவன்.

5. இறந்தது தழீஇய எச்சவும்மை, குளகம், தற்குறிப்பேற்றவணி, நிரனிறைப் பொருள்கோள் - இவை இன்னவெனக் கூறி இரண்டுக்குமாத்திரம் உதாரணந் தருக.

VI. 1. அனுக்கிரக சத்திபதிவதன்முன் திரோதைபதிதன் முறைமை யாதலால் அத்திரோதைசத்தி வசத்தினராய் மயங்கின ரரசன்.—இதன் அர்த்தத்தை விளக்கி யெழுதுக.

2. கருவூலம் என்னும் பதத்திற் கருத்தமென்ன? அந்த அர்த்தமுள்ள இரண்டு சொற்கள் திருவெண்காடர் சரித்திரத்திலிருந் தெடுத்தெழுதுக.

3. துவாதசாந்தம், ஒற்றுவர், பஞ்சவர் கோமான், அகம்படித்தொண்டர், ஐங்கணைக்கிழவன், சிரேணி-இவற்றுக் கர்த்தங் கூறுக.

VII. அடியில் வரும் மூன்று வினாக்களில் ஒன்றுக்குமாத்திரம் பாடத்திலுள்ளபடி விடை யெழுதுக:—

1. பட்டினத்துப்பிள்ளையார் காட்சிக்குப் புலியூர் நந்தவனம் எவ்வாறிருந்தது?

2. சுவேதாரணியர்காளத்திமலையையடைந்தபொழுது அங்குள்ள விலங்கு பறவைகளால் அவர்பெற்ற பணிவிடையும் அவைகட் கவர்செய்த பிரத்தி யுபசாரமுமென்ன?

3. அரிச்சந்திரனிடத்தில் வேடன் வந்து மாயப்பன்றியை எவ்வாறு வருணித்துச் சொன்னான்?

VIII. 1. பட்டினத்தார் காலத்தில் அரசுபுரிந்த சோழ பாண்டியர்கள் பெயரென்ன?

2. திருவாலவாய், கெடிலம், வாராணசி, விந்தம், இவை யென்ன? எங்குள்ளன?

IX. 1. சண்டகௌசிகத்தில் பாண்டவருற்பத்தியைப்பற்றிச் சொல்லியிருக்கிறதென்ன?

2. மத்தளை தயிருண்டனு மலர்மிசை மன்னினனு
நித்தமுந் தேடிக்காணு நிமலனே - இதை விளக்குங் கதைகளைச்சுருக்கி அவ்வாறு வரியில் எழுதுக.

X. மன்னுகதிலலை வளர்கநம்பத்தர்கள் வஞ்சகர்போய கலப், பொன்னின்செய் மண்டபத் துள்ளேபுகுந்துபுவனி யெல்லாம் விளங்க, அன்ன நடைமடவாளுமைகோ னடியோமுக் கருள்புரிந்து, பின்னைப்பிறவி யறுக்க நெறிதந்த பிறத்தக்குப் பல்லாண்டு கூறுதுமே.

இந்தப் பாட்டை யார் என்ன சந்தர்ப்பத்தில் பாடினார்?

WEDNESDAY, 18TH DECEMBER, 2 TO 5 P.M.

TAMIL: TRANSLATION AND COMPOSITION.

I. Translate into Tamil:—[See Urdu Translation Paper, page xciv.]

II. Translate into English:—

1. கரக்கும்ப கம்பக் கடாயானை மன்னன் கருத்தோடு சென், றரக்கன்றடந்தேரி லவனோடு நீடந்தரத்தேகினன், பரக்கும்பெரும் புண்யமும்பாவமுந்தாவில்பகிரண்டமும், புரக்கும் பரஞ்சோதியும்பொங்குமாமாயையும் போலவே.

2. நிற்பதேதுகொ னீடிசை யொன்றுமே நிற்கும், கற்பதேதுகொல் கசடறக் கற்பதே கல்வி, அற்பமாவதே தனைத்தினு மயற்கரத் தேற்றல், சிற்பமாமிவை செப்பெனச் செப்பினன் சிறுவன்.

3. கழிந்தாரிடுதலை கண்டார் நெஞ்சுட்கக், குழிந்தாழ்ந்த கண்ணவாய்த் தோன்றி-யொழிந்தாளைப், போற்றி நெறிநின் மினிற்றிதன் பண்பென்று, சாற்றுங்கொல் சாலச்சிரித்து.

4. நல்லார் பிறர்குற்ற நாடார் நலந்தெரிந்து, கல்லார் பிறர்குற்றங் காண்பரோ - அல்லாத, வென்போல்வாரொன்னையிகழ்வரோவென்கவிக்குப், பின்பாரோசொல்வார்பிழை.

5. (a) சந்திரமதிஅம்மறைவாய்ப்பார்ப்பானிடம்போகப் புறப்படவே, பாலகனாகிய ரோகிதாசுவன் தன் தந்தை முகத்தை நோக்கி ஐயனே எனது அன்னையார் எங்கேபோகிறாரென, அரசன் நெஞ்சந் தடுமாறி, இப்பாவியை மணந்து என்பேதை இக்கோலமாயினளேயென்று தன் விதிப்பயனை நினைத்துக்கொண்டு, அடா! என் செல்வ மகனே!

உன் அன்னை எங்கே போகிறாளோ அங்கேயே நீயுங் கூடப் போ என் கண்ணேயென்று கனைந்துருகி யுரைத்தான். அக் குழந்தை அந்தப் பிரமசாரியைப்பார்த்து, ஓ பிரமசாரி! என் அன்னையாரை எங்கே ஐயா அழைத்துக்கொண்டுபோகப் பார்க்கிறீர் என்று சினந்து தன் தாயின் முன்றானையைப் பற்றியிழுக்க, கௌண்டின்னியன் அவன்மேற் சீறிச் சினந்து அடா! துட்டா! எட்டி நில்லென்று பாலகனைப் பிடித்துத் தள்ளித் தன் காலாலுதைத்தான்.

(b) இந்த ஊரில் மழைபெய்தால் பெய்தவண்ணந்தான். நேற்றிரா பெய்தது இவ்வளவு அவ்வளவு என்றில்லை, இன்றைக்கும் வரும்போல் இருக்கிறது.

(c) விடாமுயற்சியால் கைகூடாததுண்டோ? மெல்லெனப்பாயும் தண்ணீர் கல்லினைக் குழிக்குங் கண்டாய்.

(d) அது உள்ளங்கை நெல்லிக்கனி.

III. Write an essay in Tamil on "*The covering of animals.*" 'பிராணிகளின் போர்வை'-இதைப்பற்றித் தமிழில் ஒரு வியாசமெழுதுக.

WEDNESDAY, 18TH DECEMBER, 10 A.M. TO 1 P.M.

TELUGU: TEXT-BOOKS AND GRAMMAR.

I. 1. ఈ క్రిందిపద్యములకు దండాన్వయము వ్రాయుఁడు :—

(a) తేజితబాణహస్తదృఢదీర్ఘమలీమదకృష్ణదేహుఁగృ
ష్ణాజినవస్త్రినస్త్రివిషయాప్తవిషాదునిపాదుఁజూచియా
రాజకుమారులందఱుఁబరస్పరవక్త్రవిలోకనక్రియా
వ్యాజమునందదీక్షణనివారితులైరతిమత్సరంబునన్.

(b) భూపనందనులివ్విధంబునభూరిశస్త్రమహాస్త్రవి
ద్యోపదేశపరిగ్రహస్థితినున్ననందఱయందువి
ద్యోపదేశముతుల్యమైననుత్తమోత్తముఁడయ్యెవి
ద్యాపరిశ్రమకాశలంబునదండితారినరుండిలన్.

(c) చందనతమాలతరులందునగురుద్రుమములందుఁ గదలీవనములందులవలీమా । కందతరుషండములయందును నిమీలదరవిందసరసీవనములందువన రాజీ । కందళితపుష్పమకరందరసముందగులుచుందనువు సౌరభము నొందజనచిత్తా । నందముగఁబ్రోషితులడెందములు వందురఁ గమందమలయానిలమమందగతివీచెన్.

2. మొదటిపద్యమునందలి యలంకారముఁబేర్కొని, మూడవపద్య

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ముయొక్క పాకమును గమనించి మీకు దెలిపెడు వ్రాయుఁడు.

3. రెండవమూడవపద్యముల పేళ్లు వ్రాసి, యొక్కొక్కదానియందును ఏదైన నొక చరణమందు గణవిభజనముచేసి, యతిస్థానముల వివరించునది.

II. ఈ క్రిందివానిలో గీఁతలు గలవానికిఁ బరీక్షకుంజదువుబాలురకు సుబోధమగునట్లు టిప్పణము(notes) వ్రాయుఁడు (ప్రతిపదార్థమువలదు).

1. నీవు ప్రకృతిమూలంబవై పర బ్రహ్మంబు పోలెన్, సుస్కంధంబవై భాగవతంబుభాతిన్, బహుశాఖా శోభితంబవై వేదంబువైఖరిన్, విప్రనవనమంచితంబవై హుతవహునివితంబునన్, వనమాలోపేతంబవై నారాయణుకరణిన్, ధ్వజరాజరాజితంబవై శంభునిభంగిన్, నెగడుచున్నదానవు.

2 అంతనయ్య హర్షుఖంబున ననమయాసమ నళినాసన ప్రళయంబునుం బోలె నఖర్వశౌర్యధూర్వహాహామ హామికాద్విగుణిత ద్రవిణవిక్రమా హవ్రోపక్రమ విక్రాంతచక్రాంగ నీలకంఠ మహాట్టహాసంబు విహాయసంబు దూఁటువడఁగొట్ట నెట్టనఁ దత్తఱేట వాహినీనివహ కోలహలంబు హరిద్దశకంబుకొనళ్ళఁ గనుఁగొన నాయవసరంబున విహాయోమయమువలె విహాయసంబున వాసితమయమువలె నిర్హ్రాదంబును బరిపతత్పత్రిమయమువలె సర్వసర్వం సహాతలంబును నగపడియె.

III. ఈ క్రిందిపద్యములలో నేవైన రెంటినిఁబోలుపద్యములను మీ పాఠపుస్తకములనుండి వ్రాయుఁడు. లేక ఈ మూడుపద్యములకును, మీరు చదివినభాగములలో వీనిఁబోలుపద్యములకును, గలభేదమును దెల్పుఁడు.

1. అల వైకుంఠపురంబులో నగరిలో నామూలసౌధంబుదా
పల మందారవనాంతరామృతసరః ప్రాంతేందుకాంతోపలో
త్పలపర్యంకరమావినోది యగునాపన్న ప్రసన్నుండు వి
శ్వాలనాగేంద్రముపాహిపాహియనఁగుయ్యాలించిసంరంభుఁడై.

2. అఖిలదుఃఖరోగార్తున కౌషధంబు సురుచిరంబుగ భార్యయ చూవె యెందు। సొనరభార్యాసమేతుఁడై యున్నవాని కెంతలాఘవలయ్యును నెఱుకపడవు.

3. ఎందువేటరా రెయితరు లేమఱనుతో, దారసంగసుఖముతప్పఁ

ద్రోచితకట,పాండురాజ,యశ మెన్నవైతతిక్రూరదశరథేశకులమురోయ.

IV. 1. అని లాలోలకల్లోలమాలాస్ఫాలనసముచ్చలజ్జలకణాసారశిశిరతలంబు,—దీనికి విగ్రహముగ్రాసి సమాసములంబేరొక్కనునది.

2. (a) బహువిధశాస్త్రాధ్యయనము, (b) అస్త్రవిద్య, (c) ఆత్మవిజ్ఞానము,—వీనియందెవరు శ్రేష్ఠులు?

3. పృథివ్యాది పంచమహాభూతంబులు గంధాది గుణంబువిడిచినను,—ఇచట నాదిశబ్దములచే గ్రాహ్యములెవ్వి?

4. హిమకరుఁడు——సర్యముండు——హుతాశనుఁడు——విడిచిరేని గుర్వర్థము నాచేకొనిన సద్వ్రతంబువిడుతునె?—ఇందు గీతతలు ఉంచినచోటఁ దగిన శబ్దములనుపయోగించి క్రింద గీఁతగీయంబడిన పదమేయర్థమున నుపయోగింపఁబడినదో వ్రాసి సాధారణముగ నే యర్థమున దాని నుపయోగించెదరో తెల్పుఁడు.

V. 1. ఈ క్రిందిపదముల కవయవార్థముల వ్రాయుఁడు—అబ్ధి - నిర్జరులు-దుర్లభము-కృష్ణద్వైపాయనుఁడు - పరాఙ్ముఖులు - ఆపగాతనూఁజుడు-పికవర్ధనము-వాచస్పతి.

2. ఈక్రిందివానికిఁ గలయర్థములనెల్లఁవిశదీకరింపుఁడు.—మిత్రుడు,ఘోష,నిశాంతము, కాండము, పాదము,విషయము, కోశము,ఇనుఁడు.

3. ఈక్రిందివానియర్థ మేమి?-ధ్వాంతము,శిలీముఖము,వ్రేల్మిడి,సాళ్వము,న్యగ్రోధము,నల్వమావు, సౌఖశాయనికుఁడు, పిప్పలాసోకహము.

VI. 1. ఈ క్రిందివానిలో అక్షరముల విషయముగా లోపములున్నవివరింపుఁడు—(a) దోస్తంభము, (b) సంపతున్నత్తు, (c) ఆజ్యహవిర్ధృతసౌరభ లతాంతము, (d) అప్సరగణములు, (e) కరుణదృష్టి.

2. ఈ క్రిందివానియందుఁగనుపడు విశేషములను వివరింపుఁడు.—(a) మాచేసిన యజ్ఞానము, (b) జయించినయట్టిఁడ, (c) క్రతుశతంబున కంటె, (d) నీదుగర్భమునవాఁడు.

3. ఈక్రింది పదములకు వ్యుత్పత్తి వ్రాయుఁడు.—(a)ద్రోణుఁడు (b)మాండవ్యుఁడు (c) భార్య (d) భర్త (e) నృశంసుఁడు (f) కానీనుఁడు.

VII. 1. ఇవి యేసందర్భమున వచ్చినవి?—(a) గోవుపెంటఁ దగులుకొడెభంగి; (b) ఆలస్య మమృతంవిషమ్; (c) ధనమూలమిదంజగత్.

2. (a) ఈషణత్రయము లెవ్వి ? (b) ఎట్టివాఁడు మంత్రిగనుండఁ దగునని మీపుస్తకమునఁ జెప్పఁబడినది ? (c) ఎట్టివానికిఁ దెలియఁజెప్పుట బ్రహ్మకైనను వశముగాదనిశకుంతల యనెను ? (d) వివాహ మెన్నివిధములు ? అందు క్షత్రియ వైశ్యుల కెవ్విప్రశస్తములు ? (e) శకుంతల దుష్యంతునివలనఁ బడసిన వరమెయ్యది ? కణ్వునివలనఁ బడసినవెవ్వి ? (f) స్త్రీలకు గురువులెందఱు ? పురుషులకెందఱు ? శకుంతలకుఁ గణ్వుఁడెట్టి గురువు ? మీపుస్తకమునఁ జెప్పఁబడినవిధమున వ్రాయుఁడు. (g) జ్ఞానమీఁ బడుగోవు ఎట్టిదిగానుండవలయునని వర్ణింపఁబడినది ? (h) పుత్రగాత్ర పరిష్వంగము వేనికంటె హృద్యము, శీతము, అని చెప్పఁబడియున్నది ?

VIII (1.) 'బావులు నూతిటికంటె'—ఇచట విశేషణ విశేష్యములకు విభక్తులు వేఱెట్లు ? (2.) 'ఎల్లధర్మములకుఁ బెద్దయండ్రు సత్యంబు' ఇచట మఱియొక విభక్తి యెద్దితగియుండు ? (3.) వానికిఁ గరమలిగి ; సుఖంబుండి ; పాండవులు ద్రోణునితోఁడ నస్త్రవిద్యంజదివిరి ;—ఈవిభక్తు లేసూత్రములవలనఁ గలిగె ? (4.) (a) లతాలలనల్ మృదులానిలాపవర్జితకుసుమాక్షతావళులసేసలు పెట్టినయట్టులైరి సంపతదళినీనినాదమృదుభాషల దీవనలొప్పనిచ్చుచున్. (b) కేలుఁదమ్మి.—ఇందు అలంకారము లెవ్వి ? 5 అర్థాంతరన్యాసమనఁ నెట్టిది ? అది యెన్నివిధములు ? ఉదాహరణ సహితము వ్రాయుఁడు.

IX. (1.) మీరుచదివిన పద్యకావ్యములరచించినవారెవరు ? (2.) కృతియకు లెవరు ? (3.)వారికాలీనులఁ గొందఱఁజెప్పఁడు. (4.) భారతములో మీరుచదివినభాగమును వ్రాసిన కవిచే, వ్రాయఁబడిన యితర గ్రంథములఁ బేర్కొనుఁడు. (5) భాగవతమును రచించినకవి జీవితమును దెలిసినంత వ్రాయుఁడు.

WEDNESDAY, 18TH DECEMBER, 2 TO 5 P.M.

TELUGU: TRANSLATION AND COMPOSITION.

I. Translate into Telugu:—[See Urdu Translation Paper, page xciv.]

II. Translate into English:—

1. ఈవసుధాధినాథుల జయించినయట్టిదకాదు చక్కనై
పోవకనిల్వు నాకెదిరి పోర్మదీయధనుర్విముక్తనా

నావిధమార్గణోగ్ర గహనంబున దిగ్భ్రమఁ బొందకెమ్మెయిం
బోవఁగఁబోలునీకనుచుఁబూరుకులోత్తముఁడాఁకెవీఁకతోఁ

2 ఆదురోధనుఁ డుద్భవిల్లుడును గ్రవ్యాదారవంబు ల్మివా
నాదంబు ల్మదఘూకఘూత్కృతులు నానారాసభధ్వానముల్
భూదిక్కంపముగాఁ జెలంగ విగతాంభోభృన్నభోవీథియం
దాదిత్యద్యుతిమాయఁగాఁ గురిసె నుగ్రాసృజ్జహావర్షముల్.

3 పాలేరై ప్రవహింప డగ్గఱుచు లేఁబ్రాయంబులు స్రూపముల్
హేలన్గూర్తలుగాక వెండిగొరిజల్ హేమోరుశృంగంబులఁ
గ్రాలంగ్రేపుల నట్టునాకుచ్చును నంగచ్ఛాయలైయున్నమం
దాలన్యర్బుదషట్కమిచ్చె విభుఁడుద్యద్వైదికశ్రేణికిఁ.

4. ధనపతితోదరిద్రునకుఁ దత్త్వవిదుండగువానితోడ మో
క్షునకుఁ బ్రశాంతుతోడఁ గడుఁగ్రూరునకుఁ రణశూరుతోడ భీ
రునకు వరూధితోడ నవరూధికి సజ్జనుతోడఁ గష్టదు
ర్జనునకు నెవ్విధంబునను సఖ్యము దా నెడఁగూడ నేర్చునే.

5. అరాతులు వేరీతులఁ బరులఁ బొలియింప నింపైన వెర వరసి చరియింతురు. కాన జ్ఞానవంతుండు దూర మారసి సుమంత్రి మంత్రసమాదరుండై కానివారిఁ జేరనీయక యజేయుఁడై జేతయగుచుఁ బ్రీతిఁగూరును. చిరంజీవియను చిరజీవిచరితము మున్ను విన్నయదికాదె. ఇదియునుగాక లోకములో సాజముగాఁ గ్రొత్తవాని మిత్రుఁడని పొత్తుగలసి యుంట మిత్తిఁగొంటవంటిది.

6. ఎల్లపుడును, డగ్గఱనున్న సంగఁడీడెగ్గుఁజేయునహితుండును, దవ్వులనుండి యాగతుండైన లాఁతివాఁడు మేలుచేయు హితుఁడును, అగుటకుఁ దార్కాణగా నెడలఁబొడమిన రోగము అహితమును, అడవిఁ గలిగినయౌషధము హితమును, అగుట ఎల్లరకుం దెల్లంబుగాదే.

III Write an essay in Telugu on "*The covering of animals.*"

"ప్రాణులయొక్క పైకప్పు" దీనిగుఱించి తెలుఁగుభాషలో ఒక వ్యాసము వ్రాయుఁడు.

WEDNESDAY, 18TH DECEMBER, 10 A.M. TO 1 P.M.

KANARESE: TEXT-BOOKS AND GRAMMAR.

I. 1. గయోపాఖ్యాన ముద్రామంజూషగళన్ను రచిసిదవరు

ಯಾರು ? ಈ ಗ್ರಂಥಗಳು ಯಾವಾಗ ಆದುವು ? ಈ ಗ್ರಂಥಕರ್ತರ ವಿಷಯವಾಗಿ ನಿಮಗೆ ತಿಳಿದಿರುವುದನ್ನು ಬರೆಯಿರಿ.

2. ಗಯೋಪಾಖ್ಯಾನ ಜೈಮಿನಿಭಾರತಗಳಲ್ಲಿ ಯಾವುದು ಉತ್ತಮವಾದುದೆಂದು ನಿಮಗೆ ತೋರುವುದು ? ಗಯೋಪಾಖ್ಯಾನದಲ್ಲಿ ನಿಮಗೆ ತೋರಬರುವ ಗುಣದೋಷಗಳನ್ನು ಸಂಕ್ಷೇಪವಾಗಿ ವಿವರಿಸಿ.

II. ಗಯನಾಮಕಗಂಧರ್ವಾ ಭಯದಾನಾಭೀತನಾದ ಪಾರ್ಥನೊಡನೆ ಶ್ರೀ। ದಯಿತಂ ಕಾದಿದ ಕಥೆಯಿದು । ಜಯದಂ ಕೇಳ್ವಪರಿಗೆಲ್ಲ ಜಗತೀತಲದೊಳ್॥ ಮಣಿಪುರವನಾಳ್ವ ಗಂಧರ್ವಸಂಘೋತ್ತಮಂ। ಮಣಿಮಂತನೆಂಬವನ ವರಸುತಂ ಸುರಹಿತಂ। ಗುಣಯುತಂ ಗಯನಾಮವಿಖ್ಯಾತ ವಿಭವೋಪೇತನವನಿಗಾಗಿ। ಫಣಿರಾಜಮೃದುಭೋಗಶಾಯಿ ಶ್ರೀಕೃಷ್ಣ ಫಲು। ಗುಣನೊಡನೆ ಘೋರತರ ಸಂಗ್ರಾಮರಂಗದೊಳ್। ಸೈಣಿಸಿ ತದ್ಗಯನ ರಕ್ಷಿಸಿದ ವೃತ್ತಾಂತಮಂ ಪೇಳ್ವೆ ತಿಳಿದನಿತುಮೆನಲು॥

(1.) ಇವೆರಡು ಪದ್ಯಗಳೂ ಕಥಾವಿಷಯವನ್ನು ಸೂಚಿಸುತ್ತವೆಯಷ್ಟೆ : ಒಂದಕ್ಕೊಂದಕ್ಕೆ ಈ ಭಾಗದಲ್ಲಿ ವಿರೋಧವು ತೋರಬರುವುದನ್ನು ಸ್ಪಷ್ಟೀಕರಿಸಿ, ಇದರ ಸಮಾಧಾನಕ್ಕೆ ಯಾವ ಪದಕ್ಕೆ ಯಾವ ಅರ್ಥವನ್ನು ಇಟ್ಟುಕೊಳ್ಳಬೇಕೊ ತಿಳಿಸಿ, ಆ ಅರ್ಥವು ಆ ಪದಕ್ಕೆ ಸರಿಯೊ ಸರಿಯಲ್ಲವೊ ಹೇಳಿ. (2.) ಮೇಲಣ ಕಂದ ಷಟ್ಪದಿಗಳಲ್ಲಿ ಛೇದೋದೋಷ ವಿದ್ದರೆ ತೋರಿಸುವರಾಗಿ.

III. 1. ಚತುರಪದಗತಿಯ ಸರಸಧ್ವನಿಯ ವರ್ಣಶೋಭೆ। ಭತದಲಂಕಾರದ ಸುಲಕ್ಷಣದ ಲಾಲಿತ। ಕ್ರುತಿರಂಜನದ ವಿಶೇಷಾರ್ಥಸಂಚಿತದ ವಿಸ್ತಾರದಿಂ ಪೊಸತೆನಿಸುವ। ನುತಸಕ್ತವಿ ಪ್ರಾಢತರ ಸುಪ್ರಬಂಧದಂ। ತತಿಮನೋಹರವಾದ ವಾಚಿಯಂ ಕಂಡು ಹ। ರ್ಷಿತನಾಗಿ ನೋಡುತಿರ್ದಂ ಕಲಾವಿದನಪ್ಪ ಮಾರುತಿ ಮಹೋತ್ಸವದೊಳು। ಸುಪ್ರಬಂಧದ ಪರವಾದ ಅರ್ಥವನ್ನೂ, ವಾಚಿಯ ಪರವಾದ ಅರ್ಥವನ್ನೂ ಬೇರೆಬೇರೆಯಾಗಿ ಬರೆಯಿರಿ. ಈ ಪದ್ಯದಲ್ಲಿ ಯಾವ ಅಲಂಕಾರವಿರುವುದು ? ☞ ಮಾತುಮಾತಿಗೆ ಮಾತ್ರ ಅರ್ಥವನ್ನು ಬರೆಯುವುದರಿಂದ ಪ್ರಯೋಜನವಿಲ್ಲ ; ಒಟ್ಟರ್ಥವನ್ನು ವಾಕ್ಯರೂಪದಲ್ಲಿ ಬರೆಯ ಬೇಕು.

2. ಕುದ್ದಾಲ ಹತಿಯೆನುರೆ ತಾಳ್ದೆಮ್ಮನಿನ್ನೆಗಂ।
ಮುದ್ದುಗೆದ್ದಿರೊ ವಸುಧೆ ಬೆಳೆಯಿಸಿದಳೆಂದು ತುರು।

ಗಿದ್ದ ತನಿವಣ್ಣಳಿಂದೆಸೆವ ಪೇರ್ಗೊನೆಗಳಂ ಸಲೆಸಮರ್ಪಿಸಲೊ
ಡರ್ಚಿ॥
ಎದ್ದಿರದೆ ಬಾಗಿದವೊ ಕದಳಿಗಳ್ಳೆರಣಿಗೆನ।
ಲಿದ್ದವರೆ ಮರೆದು ಪುರುಷಾರ್ಥಮಂ ಮಾಡಿದರ।
ನುದ್ದಾಮಗುಣಮುಳ್ಳ ಬೇವಿಗಳ್ ತನುಜ ನೋಡೆಂದನಾ ಪವನ
ಸೂನು॥

(a) ಈ ಪದ್ಯದ ದಂಡಾನ್ವಯವನ್ನು ಬರೆಯಿರಿ, ಮತ್ತು ಈ ಪದ್ಯದ ಅಲಂಕಾರವನ್ನು ಲಕ್ಷಣ ಸಹಿತವಾಗಿ ಹೇಳಿ. (b) ಯಾವ ಯಾವ ಪದಗಳ ಪ್ರಯೋಗದಿಂದ ಈ ಪದ್ಯದಲ್ಲಿ ಲಾಟ್ಯಾನುಪ್ರಾಸವು ನೆರೆದಿರುವುದೊ ತೋರಿಸುವರಾಗಿ.

IV. 1. "ಸರ್ವಸುಮನಸರರಿಯೆಲ್ಕರಿಯೆನರಿಯಿಂದರಿವೆ . ನಾನಿಂದೆ." "ಅರಿ" ಎಂಬ ಪದದ ಅರ್ಥಗಳನ್ನು ಸ್ಪಷ್ಟಮಾಡಿ.

2. ಎರಗಿ ಕವಿದಿಡಿದೊತ್ತಿ ಕದುಕಿ ಕೀಲಿಸಿ ಕೀರಿ। ತುರುಗಿ ತುಂಡಿಸಿ ತುಳುಕಿ ನಾಂಟಿ ಮರುಪೊನೆಗೊಂಡು। ನೆರೆಪೊರಳ್ಬದುವರಿಚತುರ್ಬಲವನೆಲ್ಲಮಂ ಕರ್ಣಜನೆಸೆವ ಕಣೆಗಳು॥

ಈ ಪದ್ಯಾರ್ಥದಲ್ಲಿರುವ ಕ್ರಿಯಾಪದಗಳಿಗೆ ಧಾತುರೂಪವನ್ನು ತೋರಿಸಿ ಅರ್ಥವನ್ನು ಬರೆಯಿರಿ. ಎಂಟರ ಮಟ್ಟಿಗೆ ಹೀಗೆ ಬರೆದರೆ ಸಾಕು.

3. "ತಾವು ಪರೀಕ್ಷೆದಲ್ಲಿ ನಿಶ್ಚಯಿಸಿದರ್ಥಕ್ಕೆ ಅನ್ಯರು ಪ್ರತ್ಯಕ್ಷವಾಗಿ ನಿಶ್ಚಯಿಸಿದ್ದು ಸಮವಾಗಲಾರದು" ಇದರ ಅರ್ಥವೇನು?

V. 1. ರಾಕ್ಷಸನು ಪಾಟಲೀಪುರವನ್ನು ತ್ಯಜಿಸಿ ಹೊರಡುವುದಕ್ಕೆ ಮುಂಚೆ ಚಂದ್ರಗುಪ್ತನ ಸಂಹಾರಕ್ಕೆ ಎಷ್ಟು ವಿಧದ ಏರ್ಪಾಡುಗಳನ್ನು ಮಾಡಿದನು ? ಅವು ಭಗ್ನವಾದ ರೀತಿಗಳನ್ನು ಸಂಕ್ಷೇಪವಾಗಿ ತಿಳಿಸಿರಿ.

*2. ಕ್ಷಪಣತ, ಸಿದ್ಧಾರ್ಥಕ, ಬಾಗುರಾಯಣ—ಇವರು ಚಾಣಕ್ಯನಿಗೆ ಯಾವ ರೀತಿಗಳಲ್ಲಿ ಸಹಾಯಮಾಡುತ್ತಿದ್ದರು ?

3. "ಈ ಕನ್ಯೆಯು ನಾಡಾಡಿ ಹೆಣ್ಣೆಂದು ತಿಳಿಯತಕ್ಕವಳಲ್ಲ; ಪಾರ್ಥನ ಚಿತ್ತವನ್ನು ಪಹರಿಸಿದ ಉಲೂಪಿಯಂತೆ ಬಹು ಚತುರಳು; ಕಾಳಿದಾಸ ಕವಿಯಂತೆ ತೋರುವ ರೋಮರಾಜಿಯಿಂದ ರಸಿಕಮನಸ್ಸನ್ನು ಸೆಳೆಯುವಳು ; ಹರಕಂಠಚ್ಛವಿಯಂತೆ ಶೋಭಿಸುವ ಕೇಕಭಾರದಿಂ ಪ್ರಿಯನ ಚಿತ್ತವೃತ್ತಿಯಂ ಮೋಹಗೊಳಿಸುವಳು; ಇವಳ ಅಂಗಸುಖವನ್ನನುಭವಿಸಿ,

ಸ್ವಸ್ಥನಾಗಿದ್ದ ವಲ್ಲಭನು ಇವಳನ್ನಗಲಿ ಕಯನಗೃಹದಿಂದ ಮರಳಿ ಬಾರನು."

ಈ ವಾಕ್ಯಗಳ ಗೂಢಾರ್ಥವನ್ನು ಚಾಣಿಕ್ಯನು ಹ್ಯಾಗೆ ತಿಳಿದನೊ ಹೇಳ್ನಾಗಿ ಸ್ಪಷ್ಟಮಾಡಿ.

VI. 1. ಸಂವರ್ತನು ಯಾರು ? ಇವನು ಅವಧೂತಾಶ್ರಮವನ್ನು ಸ್ವೀಕರಿಸುವುದಕ್ಕೆ ಕಾರಣವೇನು ? ಇವನನ್ನು ಕಂಡುಹಿಡಿಯುವದಕ್ಕೆ ಯಾವ ಉಪಾಯವನ್ನು ಮರುತ್ತನಿಗೆ ನಾರದನು ಹೇಳಿಕೊಟ್ಟನು ?

2. ಕೃಷ್ಣನು ನಾರದಮುನಿಯನ್ನು ಸತ್ಕರಿಸಿ ಉಪಚಾರೋಕ್ತಿಗಳನ್ನಾಡುತ್ತ - "ನಾವು ಸಂಸಾರದಲಿ ತೊಳಲುವರೈ ವಿಷಯ ವಿತತಾನು ಸಾರಿಗಳ್" ಎಂದು ಹೇಳಿದ್ದಕ್ಕೆ ನಾರದನು ಯಾವ ಉತ್ತರವನ್ನು ಕೊಟ್ಟನು ? ವಿಶದವಾಗಿ ಬರೆಯಿರಿ.

3. ಅಶ್ವವನ್ನು ಕಂಡುಕೊಂಡೊಯ್ಯದಿದ್ದರೆ, ತಾನು ಐದು ಬಗೆಯ ದ್ರೋಹಕ್ಕೆ ಗುರಿಯಾಗುವೆನೆಂದು ಅನಿಲಜನು ಚಿಂತಿಸುತ್ತಿದ್ದನಲ್ಲವೆ ? ಈಯೈದು ದ್ರೋಹಗಳು ಯಾವುವು ?

4. ಬಗೆ ಪೊಡಿದು ಮುನ್ನ ಮಾಡಿರ್ದ ದೈವದ್ರೋಹ। ದಘದಿಂದ ಬನದ ಪೊರವಳಿಯದೊಳ್ಳಹು ಕಂಟ। ಕಿಗಳಾಗಿ ಬಂದು ಸಂಭವಿಸಿರಲ್ತಳತ ಹೊಂಗೇದಿಗೆಗಳವರೊಳಾಡ್ಡಿ॥ ಮಿಗೆ ಮಲಿನವಾಯು ಸರ್ವಾಂಗಮುಂ ಭ್ರಮರಾವ। ಳಗೆ ತಮಗದರ ಸಂಗವೇಕೆಂದು ಘಾತಸಂ। ಪಗೆಗಳತಿಕುಚಿಗಳಂತೆಸೆವುತಿವೆ ನೋಡು ನಂದನಪುರದ ನಂದನದೊಳು॥ ಇಲ್ಲಿ ಸೂಚಿತವಾಗಿರುವ ಪೂರ್ವಕಥೆಯನ್ನು ಸಂಕ್ಷೇಪವಾಗಿ ಹೇಳಿ.

VII. 1. ಕೆಳಗಣ ಪದ್ಯದಲ್ಲಿ ಬಿಟ್ಟಿರುವುವುಗಳನ್ನು ಸೇರಿಸ ಬೇಕು :—

ಎನಿಸು ಜನಮಿರ್ದೊಡಂ... .....।
ಮೆನಿಪುದಮರಾವತೀಪಟ್ಟಣಂ ಮೂಜಗದೊ।
ಳೆನಿಸು ಜಸವಡೆದೊಡಂ..... ಮೆನಿಪುದಳಕಾಪುರಂತಿಳವೊಡೆ॥
ಎನಿಸು ಜನಮಿರಲೆನಿಸು ಜಸವಡೆಯಲದರಿಂದ।
ತನಗಿನಿಸು.....ಮೊಂಬ.....ಪುರ।
ವನಿತೆ ಗಹಗಹಿಸಿ ನಗುವಂತೆಸೆವ.....ನೋಡೆಂದನು॥

2. ಶತಾಂಗ, ಜಿರು ಬೀಯ್ಯದ ಸುಖಂ, ಬನ್ನ ಬಟ್ಟವರು - ಇವುಗಳರ್ಥವೇನು ?

3. ವೃತ್ರನಂಸೀಳ್ದವಂ, ಪೊಯುಸಖಂ, ಕುಕತಾತಂ-ಇವರುಯಾರು?

VIII. 1. ಕರ್ಣಾಟಕ ಭಾಷೆಯಲ್ಲಿ ಅನೇಕ ವೇಳೆ ವಿಭಕ್ತಿಪಲ್ಲಟಗಳು (interchange of cases) ಆಗುವುವು. ಪ್ರಥಮ ದ್ವಿತೀಯ ತೃತೀಯ ಚತುರ್ಥೀ ವಿಭಕ್ತಿಗಳನ್ನು ಇನ್ನಾವಾವ ವಿಭಕ್ತ್ಯರ್ಥಗಳಲ್ಲಿ ಪ್ರಯೋಗಿಸ ಬಹುದೊ ಉದಾಹರಣೆ ಸಹಿತವಾಗಿ ತಿಳಿಸಿ. 2. ಯಾವ ಯಾವ ಪದಗಳು ಸೇರಿ ಮುಂದೆ ಹೇಳುವ ಸಮಾಸಿತ ಪದಗಳು ಹುಟ್ಟಿರುವುವೊ ತೋರಿಸಿ ಸಮಾಸದ ಹೆಸರುಗಳನ್ನು ಹೇಳಿ:—ಜೆಂದುಟಿ, ಪಿರಿಯ ಮಗಂ, ಬಿರುಗಾಳಿ, ಈಮನೆ, ಏವೋದಂ, ಜೆಂಬೂದಿ. 3. (a) ಕೇಳ್ವುದು ಮೌನಿಶೇಖರರು ಕೃಷ್ಣಗುಣೋದ್ವೇಲ ಸಚ್ಚರಿತ್ರವಂ. (b) ಬಹುಭವಸಂಚಿತೋರು ಭವಬಂಧ ವಿಮೋಚನನಾ ತ್ರಿಲೋಚನಂ. ಇವು ಯಾವ ವೃತ್ತದಲ್ಲಿವೆ ?

WEDNESDAY, 18TH DECEMBER, 2 TO 5 P.M.

KANARESE: TRANSLATION AND COMPOSITION.

I. Translate into Kanarese:—[See Urdu Translation Paper, page xciv.]

II. Translate into English :—

1. ಅಯ್ಯಾ, ಬಾಗುರಾಯಣನೇ, ಈಗ ಈಶಕಲ್ಪದಿಂ ನಡೆದಿರುವ ಈ ನಂದಪ್ರಳಯವಂ ತಿಳಿದಿರುವಿಯೆಷ್ಟೆ ? ನಾವು ಪತಿವಿಯುಕ್ತರಾಗಿ ಏನು ಪ್ರಯೋಜನಕ್ಕೆ ಈ ಭೂಮಿಯಲ್ಲಿರ ಬೇಕು ? ಶೈತ್ಯಾಧಿಕ್ಯದಿಂ ಹೆಚ್ಚಿ ಪ್ರಜ್ವಲಿಸುವ ಬಡಬಾಗ್ನಿಯಂತೆ ಅನುನಯ ಸಹಸ್ರಗಳಿಂ ಮತ್ತು ಪ್ರಜ್ವಲಿಸುವ ಪತಿವಿಯೋಗದಿಂದುಂಟಾದ ದುಃಖಾಗ್ನಿಯು ಇಂಧನಾಗ್ನಿಯಿಂದಲ್ಲದೆ ಮತ್ತೊಂದರಿಂ ಶಮನವಾಗಲಾರದು; ನಮ್ಮ ವೃದ್ಧರಾಯರು ಪುತ್ರಶೋಕ ಗ್ರಹಗ್ರಸ್ತರಾಗಿ ಪ್ರಜ್ಞಾಶೂನ್ಯರಾಗಿ ಜಗದ್ವ್ಯವಹಾರವಂ ತ್ಯಜಿಸಿರುವದರಿಂದ ನಮ್ಮ ಸಂಕಲ್ಪಕ್ಕೆ ಅಂತರಾಯ ಬಾರದಂತೆಯೂ ನಮಗೆ ಸದ್ಗತಿ ರೂಪವಾದ ಪತಿ ಸನ್ನಿಧಿ ದೊರಕುವಂತೆಯೂ ನೀನೇ ನಿಂತು, ಮಾಡಿಸ ಬೇಕು; ನಮಗೆ ಪರಲೋಕ ಸಾಧನಾರ್ಥವಾಗಿ ಇದ ಕೋ ! ಈ ಕೋಟಿ ದ್ರವ್ಯದಲ್ಲಿ ಪಾದಾಂಶವು ವಿಪ್ರವರ್ಗಕ್ಕೆ - ಪಾದಾಂಶವು ಪೂರ್ತಕರ್ಮಕ್ಕೆ - ಪಾದಾಂಶವು ದೀನಾನಾಥವಿಪನ್ನ ಪೋಷಣೆಗೆ- ಮಿಕ್ಕ ಪಾದಾಂಶವು ರಾಜಕೋಶಕ್ಕೆ ಸಲ್ಲಲಿ; ಈ ರೀತಿಗೆ ಮಾಡಿಸಿ, ಶ್ರೇಯೋವಂತನಾಗಿರುವದೆಂದು ನಾವು ಹೇಳಿದೆವೆಂಬದಾಗಿ ಚಂದ್ರಗುಪ್ತನಿಗುಸುರುವನಾಗು ; ಎಲ್ಲವಂ ಬೇಗ ಸಜ್ಜುಮಾಡಿಸು.

2. ಪುಯ್ಯೆಲೊಳ್ಬಂದಳವು ತೋರುತಿರ್ಪಾಗ ನಿಂ। ಮಯ್ಯೆ ಮುತ್ತಯ್ಯನಾರೆಂದು ತನ್ನಂ ಕೇಳ್ವೆ। ಕಯ್ಯೆರದು ಪ್ರಾಣಿಲ್ಲವೆ ಕರ್ಣ ಕಮಲಹಿತಕರರವರನುಸುರಬಹುದೆ॥ ಪುಯ್ಯೆಲೆಳಸಿದ ವಿರೋಧಿಯ ಕಿವಿಗೆ ವಿರಹಿತಂ। ಗಯ್ಯೆಬೇಕಲ್ಲದೆಲೆಮರುಳೆ ಕೋಪಿದನಾದ। ಡೊಯ್ಯನೆ ಪರೋಕ್ಷದೊಳ್ತಳದುಕೊಳ್ಳಾಸೆನುತ ವೃಷಕೇತು ತೆಗದೆಚ್ಚನು॥

3. ಸಾರ್ವ ನಿಗಮಾರ್ಥಮಂ ತಿಳಿದು ಸತ್ಕರ್ಮಮಂ। ಸಾರ್ವ ಕಾಲಂಗೈದು ಪರವಧೂ ವಿಷಯಮಂ। ಪಾರ್ವ ಚಿಂತೆಯನುಳಿದು ಲೋಕಾಪವಾದಮಂ ಪರಿಹರಿಸಿ ಪರರೊಡವೆಗೆ॥ ಪಾರ್ವನಲ್ಲದೆ ಸದಾಚಾರದಿಂ ನಡೆದೊಡಾ। ಪಾರ್ವನಿಹದೊಳ್ಕೀರ್ತಿಪರನಾಗಿ ಬಳಕವಂ। ಪಾರ್ವ ನುತ್ತಮಗೆತಿಗೆ ದೇಹಾವಸಾನದೊಳ್ಬಾಯಲ ಕೇಳೆಂದೆನು॥

4. ಹರನಗಳ ಮಧ್ಯದಲಿ ವರ್ತಿಪ। ಗರಳಶಿಖಿ ಮೇಲೊತ್ತಿ ಬರದಂ। ತಿರಲಮೃತಕಿರಣನನು ನಿಲ್ಲಿಸಿ ಕೆಳಗೆ ಪ್ರವಹಿಸದೆ। ವರಪಯೋನಿಧಿಮಥನಭವವಿ। ಸ್ಫುರಿತನವನೀತವನು ಕೆಳಗಿಟ್ಟಿರುವರಮರರೆನಲ್ಕೆ ರಾಜಿಸಿತಲ್ಲಿರಜತಗಿರಿ॥

5. ರಾಕಾಶಶಾಂಕನಭ್ಯುದಯಮಂ ಕೆಡಿಸಿತ। ನ್ನಾಕಾರಮಂ ತೋರಿಸುವೆನೆಂಬ ಕತ್ತಲೆಯೊ। ಲಾಕಮಲಲೋಚನನ ಭೃತ್ಯನಂ ಕೊಲಿಸಿ ತಾಂ ಬಾಳ್ವೆನೆಂ ಬುಜ್ಜುಗದೊಳು॥ ಆ ಕುಮತಿಯೆಹ ಮಂತ್ರಿ ಬಳಕೊಂದು ಲೇಖನವ। ನೇಕಾಂತದೊಳ್ಬರೆದು ಮೇಣದಕೆ ಮುದ್ರೆಯಂ। ಜೋಕೆಯಿಂದಳವಡಿಸಿ ಕರಿಸಿ ಶಶಿಹಾಸನಂ ನೋಡಿ ನಗುತಿಂ ತೆಂದನು॥

6. ದೇವ ನೀನೇ ಬಲ್ಲೆನಿಮ್ಮಯ। ಭಾವನೀ ಧರ್ಮಜನ ಬಹುಮಾ। ನಾವಮಾನದ ಹೊರಿಗೆ ನಿನ್ನದು ಹರಣ ಭರಣವನು॥ ನೀವು ಬಲ್ಲಿರಿ ಕಾಲೊಳೊದದುದು। ನೋಪಿ ತಲೆಯಲಿ ಹೊತ್ತು ನಡೆಸುವ। ಡಾವು ಬಲ್ಲೆವು ಜೀಯ ಯೆಂದನು ದ್ರುಪದ ಭೂಪಾಲಾ॥

III. Write an essay in Kanarese on "*The covering of animals*"

"ಪ್ರಾಣಿಗಳ ಮೈಹೊದಿಕೆ" - ಇದನ್ನು ಕುರಿತು ಕನ್ನಡ ಭಾಷೆಯಲ್ಲಿ ಒಂದು ಉಪನ್ಯಾಸವನ್ನು ಬರೆಯಿರಿ.

WEDNESDAY, 18TH DECEMBER, 10 A.M. TO 1 P.M.

MALAYALAM: TEXT-BOOK AND GRAMMAR.

I 1. താഴെ കാണുന്ന വരികളില്ലുള്ള വൈചിത്ര്യത്തെ സ്പഷ്ടമാക്കി അർത്ഥം പറയണം:—

(a) കുടുചതതിം സമുദീക്ഷ്യപുഷ്പിതാഗ്രാം.

(b) ആകൎഷണംകൃത മനെനയദ്ദാതദാനീം
ഉച്ചാടനം സമഭവദ്വിഷതാം വിചിത്രം

(c) പാടീരാഞ്ചിത വിഗ്രഹാനവരസാസ്സാരം ഗനെ
ത്രാവധൂഃ കല്യാണീരഥരൽ സനിൎമ്മലഹതം ശ്രീ
മൽ പുരംമോഹനം.

(d) മന്ദാരവാത നിഹതപ്രസരെതദാനീം
സമ്മദ്ദിതെചസരസ്വം വിമലാഭ്രനാഗെ.

2. താഴെകാണുന്ന വരികളിലുള്ള അലങ്കാരങ്ങ
ളെവ ?

(a) കീൎത്തിപാണ്ഡരമല്ലയൊ തവഗാത്രമിന്നു പരമ
ന്നതം' വാ ഴുന്നുനീഹാരഗൌരമെന്നും ചിലർ
ഓൎത്താലധികകപടമതുന്നതം.

(b) ഗിരികൂടതുംഗതയും പരിചൊടുകൈകൂപ്പും പെരു
താകൊരുന്നതിയും.

(c) അനലശിഖകളു മനിലസുത ഹൃദയവുംതെളി
ഞ്ഞാഹന്തവിഷ്ണു പദം ഗമിച്ചുതദാ.

(d) വിബുധപതിയൊടു നിശിചരാലയംവെന്തൊരു
വൃത്താന്തമെല്ലാ മറിയിച്ചുകൊളുവാൻ
അഹമഹമികാധിയാ പാവകജ്വാലകൾ
അംബരത്തൊളുമയന്നു ചെന്നുതദാ.

(e) ദിവ്യരത്നങ്ങളാൽഭൂതിപരിപൂൎണ്ണമായുള്ളലങ്കയും
പുനരനില സുതനതുദഹിപ്പിച്ചകാരണം
ഭൂതിപരിപൂൎണ്ണമായുന്നിതത്ഭുതം.

3. താഴെകാണുന്ന പദങ്ങളിലുള്ള സമാസങ്ങ
ളെവ ? (a) ദെവകീനന്ദനഃ—പാടിരാശൊകവാടി—
ഉപകുംഭം—അപ്രിയം—ഭീമസെനഃ—പഞ്ചവടി—
മധുരഗിരാ. (b) താഴേകാണുന്നപദങ്ങളെസന്ധിചെ
ത്തെഴുതുക:—പാൎത്ഥാ+ഇവ-ശരൽ+ചന്ദ്രഃ-ദൈ

വ + അനുഗ്രഹം-ബുദ്ധിഃ + ഏവ-വാക് + അർത്ഥൗ-അതി + ഉത്സുകഃ. (c) വൃക്ഷഃ-ലതാ-ധനം-ഈശബ്ദങ്ങൾക്കു ലിംഗനിയമം മലയാള വ്യാകരണം അനുസരിച്ചല്ലാ. തമ്മിൽ ഉള്ള പ്രധാനവ്യത്യാസം എന്ത? (d) അപൂർണ്ണക്രിയ എത്രവിധം? സഹായക്രിയകൾ-ഊനക്രിയകൾ - നിഷേധക്രിയകൾ - ഇവയ്ക്കുദാഹരണം എഴുതണം:—

II. മലയാളത്തിൽ അർത്ഥം പറയണം :—

"കാർത്താന്തീന്താമാർത്ത ചിന്തൊഥവാണിം
ശ്രുത്വാഗത്വാവെഗതൊ നാകലൊകം
തത്രാസീനം ദെവരാജം സഭായാം
നത്വാപാർത്ഥസ്സാദരം വാചമൂചെ".

"ദക്ഷാരാതിന്നിരീക്ഷ്യക്ഷിതി ധരതനയാംജാ
തരാഗസ്തുദാനിം അക്ഷീണാമെയ ധൈര്യൊ
ത്ഥടിതിനിജമനഃ ക്ഷൊഭവൊതുംദിദൃക്ഷുഃ
ദിക്ഷുപ്രക്ഷിപ്തചക്ഷുഃ പുനരപിസുദൃഢാ കൃ
ഷ്ട സമ്മൊഹനാസ്ത്രം ലക്ഷിതൃത്രാത്രവക്ഷ
സ്ഥലമസമശരം തൽക്ഷണാഭിക്ഷതെസ്മ"

"സപുനരഥസഹായപ്രാപ്തയെജാഗ്രതുകഃ, പ്ര
ബലമിതിചജാനൻധീബലംസൈന്യവീര്യാൽ
ഭുവിനയബലതുക്ഷാനമ്പിയെഷദ്വിജെന്ദ്രാൻ
നഖലുബുധജിഷ്ണുക്ഷാതസ്യശങ്കാസ്പദംസ്യാൽ."

III. 1. പാർവ്വതീപരിണയവും സന്താനഗൊപാലവും തമ്മിൽ ഏതിനാണ അധികം സാരസ്യം എന്ന സ്വല്പം വിവരിയണം.

2. സ്രഗ്ധരാ, ശാർദ്ദൂലവിക്രീഡിതം, ഇവയ്ക്കു വെണ്ടുഗണങ്ങൾ ഏവ എന്നും യതിസ്ഥാനങ്ങൾ എവിടെയെല്ലാമെന്നും പറയണം.

3. ജതൗജരൗ. യയയയ. നഭൗഭരൗ. ഇവ ഏതെ ത്തു വൃത്തങ്ങളുടെ ലക്ഷണങ്ങളാകുന്നു?

IV. അൎത്ഥംപറയണം. കീഴെവരയുള്ള ശബ്ദങ്ങൾക്കു വ്യുൽപ്പത്തിയും കൂടെപ്പറയണം.

കാകുസ്ഥൻ സാഗരം പ്ലവഗം മലർമങ്ക ഏമി അല്ലു വിശതു ധാമ മുനിപ ഇകൽ സുരാപ്രിയഃ കലിതാന്തദാസം ഗുരുഗരുദന്തകം തെറുക ഗഭസ്തിമാലീ

V. താഴെകാണുന്നവാക്കുകൾ അരു എപ്പൊൾ പറയുന്നവ?

1. ചന്ദ്രബിംബത്തിങ്കൽനിന്നുഹാലാഹലംവന്നു പതിച്ചപൊലെ നല്ലചന്ദനവൃക്ഷത്തിൽനിന്നു ഹുതാശനജ്വാലകളെന്നപൊലെ

2. വിധിമതംനിരസിച്ചീടാമൊ വിദഗ്ദ്ധന്മാൎക്കും.

3. അകതളിരി ലറിവുകുറയുന്നവൎക്കേററമുള്ളജ്ഞാനമൊക്കെ നീക്കേണം ബുധജനം.

4. കഷ്ടംകഷ്ടം തൃണങ്ങൾക്കു അഗ്നിയൊടെങ്ങിനെയാണ വിരോധം.

5. വിധികൃതവിലാസമിതു വസയംവിസ്മയം.

6. രാക്ഷസൻെറയൊ പിശാചിൻെറയൊകെളികരനായിരിയ്ക്കട്ടെ.

7. ഇവിടെക്കുവരുവതിനു പറകെന്തുമൂലം ഭവാൻ

VI. സന്തനഗോപാലത്തിലെ വൈകുണ്ഠവൎണ്ണപ്പദം കാണാതെഴുതണം. അല്ലെങ്കിൽ "മൂഢ അതി. പ്രൌഢമാംനിന്നുടെ പാടവം കുത്രഗതം" എന്നുള്ള പദം എഴുതണം. രണ്ടും എഴുതണ്ട.

VII. (1) പഞ്ചസെനാധിപന്മാരാരെല്ലാം. (2) ദാരുവമ്മാവ, സിദ്ധാൎത്ഥകൻ, ഉന്ദുരുകൻ, ഇവരെപ്പററി ചെറിയടിപ്പണങ്ങൾ (നോട്ടുകൾ) എഴുതണം. (3) ചാ

ണ്ണക്കൃൻെറ കളളഎഴുത്തിൻെറ വാചകംപറയണം.
(4) ചന്ദ്രഗുപ്തൻ സുഗാംഗപ്രാസാദത്തിൽ വരുന്ന തിനു മുമ്പു ശരൽകാലത്തെ വർണ്ണിയ്ക്കുന്നതിൻെറ ചുരുക്കം എഴുതണം.

VIII. 1. നാരായണീയം, കൃഷ്ണഗാഥ, നൈഷധചമ്പു, കുചേലവൃത്തംവഞ്ചിപ്പാട്ട (കഥകളിയിൽ) നരകാസുരവധം, കുമ്മിരവധം, കീചകവധം, രാവണോത്ഭവം, മത്സ്യവല്ലഭ വിജയം, ഇവ ആരാരുണ്ടാക്കിയത?

2. താഴെകാണുന്നവ ഏതപുസ്തകങ്ങളിൽനിന്നും എടുത്തവ?

(a) പഞ്ചമരാഗംകൊണ്ടുപാട്ടുകൾപാടുന്നൊരു
(b) വെണ്മതികലാഭരണ നംബികൾഗണേശൻ
(c) ഉപ്പെരിയുംനിൻെറ കൂട്ടാനുമൊക്കവെ
കപ്പയിലാക്കുവാ നെന്നെതോന്നു.
(d) ംരംച്ചയ്യപോലും കൊടുക്കയില്ലഞ്ഞാൻ
പൂച്ചയ്ക്കെന്നുളളതൊ പിന്നെയെല്ലൊ.
(e) ഉണ്ണികൃഷ്ണൻ മനസ്സിൽകളിക്കവെ
ഉണ്ണികൾമററു വെണ്ണമൊക്കളായി.

IX. അന്വയം എഴുതണം.

പാദസ്യാവിർഭവന്തീമവനതി മവനെ രക്ഷത സ്സൈരപാതൈസ്സങ്കോചെനൈവദൊഷ്ണാമ്മു ഹുരഭിനയതസ്സർവ്വലോകാതിഗാനാം,
ദൃഷ്ടിംലക്ഷ്യൈഷുനൊഗ്ര ജ്വലനകണമുചംബധ തൊദാഹഭീതേ തത്യാധാരാനരൊധാത്ത്രി പുരവിജയിനഃ പാതുവൊദുഃഖനൃത്തം.

WEDNESDAY, 18TH DECEMBER, 2 TO 5 P.M.

MALAYALAM: TRANSLATION AND COMPOSITION.

I. Translate into Malayalam:—[See Urdu Translation Paper, page xciv.]

II. Translate into English :—

1. ഗുണമുള്ളവരുടെ ഗുണത്തെക്കൊടുപ്പാനായി
ഗുണമില്ലാതജനം ചെയ്യുതിൻഫലങ്ങളും
ഗുണങ്ങളായെവ്വിരുമേൽക്കുമേൽ ഗുണികൾക്കും
ഗുണക്കൈടുതുചെയ്യുന്നവക്കെയകപ്പെട്ടു.

2. നീലാരവിന്ദനേത്രൻ ലീലാമാനുഷൻ
നീലാംബുദശ്യാമഗാത്രൻ പാലാഴിശായി
ഴിപോലെതുണയ്ക്കുന്നാകിൽ പൌലൊമികാ
ന്താത്മജൻ
പാലിക്കുംബാലകനെ-ഴിപരിപാഹിഹരെനാഥ

3. പുകൾപെരിയ പുരുഷമണിരാമൻതിരുവട
പുണ്യപുരുഷൻ പുരുഷോത്തമൻപരൻ
പുരമഥനഹൃദിമരുവു മഖിലജഗദീശ്വരൻ
പുഷ്കരനെത്രൻ പുരന്ദരസേവിതൻ
ഭുജഗപതിശയന നമലൻത്രിജഗല്പരിപൂർണ്ണൻ
പുരുഹൂതസൊദരൻ മാധവൻ
ഭുജഗനിവഹാശനവാഹനൻ, കേശവൻ
പുഷ്കരപുത്രിരമണൻ പുരാതനൻ
ഭുജഗകുല ഭൂഷണാരാധിതാഘ്രിദ്വയൻ
പുഷ്കരസംഭവപൂജിതൻ നിർഗ്ഗുണൻ
ഭുവനപതിമഖപതി സതാംപതിമൽപതി
പുഷ്കരബാന്ധവ പുത്രപ്രിയസഖി
ബുധജനഹൃദിസ്ഥിതൻ പൂർവ്വദേവാരാതി
പുഷ്കരബാന്ധവ വംശസമുദ്ഭവൻ
ഭുജബലവതാംവരൻ പുണ്യജനാന്തകൻ
ഭൂപതിനന്ദനൻ ഭൂമിജാവല്ലഭൻ
ഭുവനതലപാലകൻ ഭൂതപഞ്ചാത്മകൻ
ഭൂരിഭൂതിപ്രദൻ പുണ്യജനാനന്ദിതൻ
ഭുജഭവകുലാധിപൻ പുണ്ഡരീകാനനൻ
പുഷ്പബാണൊപമൻ ഭൂരികാരുണ്യവാൻ.

4. കളമൊഴിയുമഴകിനൊടു യൌവ്വനകാന്തിയും
കാലെധരിച്ചമെ വീട്ടംദശാന്തരെ
നിഖിലഗുണമുടയ മടുമൊഴിയുടെപടുത്വവും
നീണ്ടിരുണ്ടഗ്രം ചുരുണ്ടോരുകേശവും
നിടിലതട തിലകപരി ലസിതദഹ ശോഭയും
നല്ലോരുചില്ലിവില്ലാട്ട സല്ലാപവും
നിഖിലമലശരസമകടാക്ഷ വിക്ഷേപവും
നെഞ്ചുകമഞ്ഞുന്ന പുഞ്ചിരികൊഞ്ചലും
കണ്ടുംപുനരുടൻ മാനിച്ചുകേട്ടും
ആനന്ദവിവശരായി പലരുമിഹ
പലപലദിഗന്തങ്ങളിൽനിന്ന
പാരാതെദ്രവ്യവും കെട്ടിയെടുപ്പിച്ച
അവളുടെയ ജനകനുടെമുമ്പിൽ വെച്ചാർ.

III. Write an essay in Malayalam on "*The covering of animals.*"
മൃഗങ്ങളുടെ പുണ്ണെച്ചയെകുറിച്ച ഒരു മലയാളഗദ്യപ്രബന്ധം എഴുതുക.

WEDNESDAY, 18TH DECEMBER, 10 A.M. TO 1 P.M.

URIYA: TEXT-BOOKS AND GRAMMAR.

I. (କ) ଦିଗ୍‌ଦର୍ଶନ ଯନ୍ତ୍ର କିପରି ତାହା ବୁଝାଇ ଦିଅ ଏବଂ ତାହାଦ୍ୱାରା ମନୁଷ୍ୟମାନଙ୍କର କି ହିତ ସାଧନ ହୋଇ ଅଛି ତାହାର ସଂକ୍ଷିପ୍ତ ବିବରଣ ଲେଖ । (ଖ) "ବାସ୍ତବ ମୁଦ୍ରା ଯନ୍ତ୍ରର ସୃଷ୍ଟି ହେବା ଦିନରୁ ଏ ପର୍ଯ୍ୟନ୍ତ ପୃଥିବୀରେ ଜ୍ଞାନ ଆଉ ଧର୍ମର ପ୍ରଚାର ବିଷୟରେ ଯୁଗାନ୍ତର ଉପସ୍ଥିତ ହୋଇ ଅଛି ।" ଦୃଷ୍ଟାନ୍ତ ଦ୍ୱାରା ଏହି ବାକ୍ୟରେ ସତ୍ୟତା ନିରୂପଣ କର ।

II. (କ) ତାପମାନ ଯନ୍ତ୍ରର ନିର୍ମାଣ-ପ୍ରଣାଳୀ ଓ ପ୍ରୟୋଗ ବୁଝାଇ ଲେଖ । (ଖ) "ଜନ୍ମସ୍ଥାନ ସ୍ନେହର ଆକର ।" ତୁମ୍ଭ ପଠିତ ଗୁରୁ ପାଠରୁ ଏହି ବାକ୍ୟ-ନିହିତ ଭାବର ସାର୍ଥକତା ସମ୍ଭାବିବ କେତେକ ଭାବ ସଂକଳନ କରି ଲେଖ ।

III. ନିମ୍ନୋକ୍ତ ବାକ୍ୟମାନଙ୍କର ଅର୍ଥ ବିଶଦରୂପେ ବୁଝାଅ :—

1. ଆମ୍ଭେ ଏହି ସର୍ବଜନାଧୃତ ଅପରିବର୍ତ୍ତନୀୟ ନିୟମ ପରି-ହାର ନିମନ୍ତେ କେଉଁଠାରେ ପଳାୟନ କରିବୁଁ ? 2. ପରିଶେଷରେ ସେହି ନିଶାଚର ସ୍ୱୟଂ ଉଦ୍ଭାନ୍ତ ହୋଇ ଉତ୍ପାତ-ପବନ-ଗ୍ରସିତ ଏକମାତ୍ର-ତାଳବୃକ୍ଷ-ବିଶିଷ୍ଟ ଗିରିଶୃଙ୍ଗ ତୁଲ୍ୟ ଅଭିବେଗରେ ଧାବମାନ ହେଲା । 3. ସେ ଆଶୁତୋଷଙ୍କର ଆରାଧନା ନିମନ୍ତେ ସ୍ୱକୀୟ ଶିରଃ-ପରିମାର୍ଜ୍ଜନକାଳରେ ବୋଧ ହୁଏ ଆମ୍ଭ ଚରିତ୍ର ଲକ୍ଷ୍ୟାଂଶ ବୋଲି ବିଶମ ମସ୍ତକଟି ଅବଶିଷ୍ଟ ରଖି ଅଛି । 4. ହା ପୃଥ୍ୱି । ତୁମ୍ଭେ ଦଶରଥଙ୍କର ମରଣାନନ୍ତର ସ୍ୱାମୀଙ୍କ ହସ୍ତଗତ ହୋଇ ସାତିଶୟ ଗୌରବାନ୍ୱିତା ହୋଇ ଅଛ । 5. ରାଜା କ୍ଷୟାତୁର ହେଲାରୁ ରଘୁବଂଶ କଳାମାତ୍ରାବଶିଷ୍ଟ ଚନ୍ଦ୍ରବିଶିଷ୍ଟ ନଭସ୍ତଳର, ପକ୍ଷାବଶେଷିତ ଗ୍ରୀଷ୍ମକାଳୀନ ଜଳାଶୟର, ଏବଂ ନିର୍ବାଣୋନ୍ମୁଖ ଦୀପଶିଖାଜନର ତୁଲ୍ୟତା ଲାଭକଲା ।

IV. (କ) ଲକ୍ଷ୍ମାଙ୍କୁ କିଣ କାଳୁତ୍ସ୍ଥ ଅଭୁଧା କରିପେ ପ୍ରାପ୍ତ ହେଲା । (ଖ) ବାଳ୍ମୀକ ରାମଙ୍କର ପୁତ୍ରଦ୍ୱୟଙ୍କର ନାମ କୁଶ, ଲବ ବୋଲି କାହିଁକି ରଖି ଥିଲେ । (ଗ) ଲବଣାସୁର ବଧ କାହା ଦ୍ୱାରା କିରୂପେ ସାଧିତ ହେଲା ?

V. (କ) ପ୍ରତିକୃତି, ସ୍ନୁଷା, ବନିତା, ଚତୁଷ୍ପାଳପରିମିତ, ଆଚୋଦ୍ୟ, ଉକ୍ତପ୍ରହର୍ତ୍ତା, ଯୁଗପତ୍, ବେପମାନ, ଭୂଲୋକ-ବିଶ୍ରୁତ, ଚର୍ମ-କ୍ଲେଦ, ଆତପ ତାପିତ, ମୁମ୍ପ୍ରାପ୍ତମ୍ ଏମାନଙ୍କର ଅର୍ଥ ଲେଖ । (ଖ) ଦେବ ଓ ଦେବାଙ୍ଗନାମାନଙ୍କର ନାମୋଲ୍ଲେଖ କର । (ଗ) ଜନତା, ପ୍ରଥମତଃ, ଉଦ୍ଦୀପ୍ତ, ଐନ୍ଦ୍ର, ଚୂର୍ଣ୍ଣାୟମାନ, ଆବାଳବୃଦ୍ଧବନିତା, ଆରୂଢ଼, ସୌନ୍ଦର୍ଯ୍ୟ, ମୁମୁକ୍ଷୁ, ଚିରନ୍ତନ ଏମାନଙ୍କର ବ୍ୟୁତ୍ପତ୍ତି ସ୍ଥିର କର । (ଘ) ଉଦ୍ଭିଦ୍ ଦ୍ରବ୍ୟ, ପ୍ରତିଦ୍ରବ୍ୟ, ଧାତୁଦ୍ରବ୍ୟ, ଭୂଲକ୍ଷୀକ୍ଷଣ, ଚୁମ୍ବକ-ଶଳାକା, ଦିଗ୍‌ଦର୍ଶନ, ଅନୁବୀକ୍ଷଣ, ତାପମାନ, ଆର୍ଦ୍ରତା ଆବର୍ତ୍ତନ, ଧୂମକେତୁ, ସୌରଜଗତ୍, ଗ୍ରହ, ଉପଗ୍ରହ, ଅଙ୍ଗୁରୀୟକ ଏମାନଙ୍କର ଇଂରାଜି ନାମ ଲେଖ ।

VI. 1. " 1695 ସାଲରେ ଏକ ଦୈବ ଘଟଣାରେ ଇଂରାଜମାନେ ଆଉ ଭିନ୍ନଦେଶୀୟମାନେ ଯେଉଁ କାମନା ସଫଳ କରିବାକୁ ଲଙ୍କାରେ ବି ବିଜୟରେ ଆଜ୍ଞା ପ୍ରାପ୍ତ ନୋହୁଥିଲା ଆପଣା 2 ସେ ମାନସ ସଫଳ କଲେ ଅର୍ଥାତ୍ ଆପଣା 2 କାରଖାନା ସୁରକ୍ଷା କଲେ । "

(କ) ଉପରୋକ୍ତ ବାକ୍ୟରେ ଲେଖକଙ୍କର କି ଭାବ ପ୍ରକାଶ

କରିବାର ଯଥାର୍ଥ ଅଭିପ୍ରାୟ ? ପରିବିନ୍ୟାସ ଦୋଷରୁ ସେହି ଭାବ ପ୍ରକଟନର କି ବ୍ୟାଘାତ ଜନ୍ମି ଅଛି ? କି ପରି ପରିବିନ୍ୟାସ କଲେ ଲେଖକଙ୍କର ପ୍ରକୃତ ଅର୍ଥ ପ୍ରକାଶର ସୁବିଧା ହେବ ? (ଖ) ଉକ୍ତ ବାକ୍ୟରେ କୌଣସି ବ୍ୟାକରଣ-ଗତ ଦୋଷ କିମ୍ବା ରୁଚି-ବିରୁଦ୍ଧ ପଦ-ପ୍ରୟୋଗ ଥିଲେ ଦେଖାଅ ।

2. "ବର୍ତ୍ତମାନ ଅଞ୍ଚଳରେ ଜେଜୁ, ବେନେହୁ ଦୁଇ ଗ୍ରାମର ଅଧିପତି ଶୋଭସିଂହ ନାମରେ ଯେ ଏକ ହିନ୍ଦୁ ଜମିଦାର ସେ ସେଠାର ରାଜାର ସଙ୍ଗେ ବିବାଦ କରି ବିଦ୍ରୋହାଗ୍ନିରେ ହୋଇ ଓଡ଼ିଶାସ୍ଥିତ ପଠାଣମାନଙ୍କର ପ୍ରଧାନ ରହିମଖାନଙ୍କୁ ଆପଣା ସଙ୍ଗେ ମିଳିବାକୁ ଡାକିଲା ।"

(କ) ଉପରୋକ୍ତ ବାକ୍ୟର ଦୋଷ ପରିହାର କରି ଶୁଦ୍ଧ କରିଲେଖ ।

WEDNESDAY, 18TH DECEMBER, 2 TO 5 P.M.

URIYA: TRANSLATION AND COMPOSITION.

I. Translate into Uriya:—[See Urdu Translation Paper, page xciv.]
II. Translate into English:—

1. ଅନନ୍ତର ସେହି ଶିକ୍ପାଳ-ସମ ଭୂପତିଙ୍କୁ ନବ କୁସୁମ ଦ୍ୱାରା ସେବା କରିବା ଲାଗି ବୋଧ ହୁଏ ବସନ୍ତ ଋତୁ ଉପସ୍ଥିତ ହେଲା । ଆହୋ କୁସୁମୋଦ୍ଭବ, ଅନନ୍ତର ନବପଲ୍ଲବ, ପଶ୍ଚାତ୍ ଭ୍ରମରଙ୍କାର ପରିଶେଷରେ କୋକିଳରବ ଏହି କ୍ରମରେ ଋତୁରାଜ ବସନ୍ତ ପ୍ରଥମତଃ, ବନଭୂମିରେ ଆବିର୍ଭୂତ ହେଲେ । ଦକ୍ଷିଣର ମଳୟ ଗିରି ପରିତ୍ୟାଗ ପୂର୍ବକ କ୍ରମେ ଉତ୍ତରାଭିମୁଖରେ ଚଳିଲେ ; ପ୍ରାତଃକାଳରେ ଆଉ କୁଜ୍ଝଟିକାବରଣ ରହିଲା ନାହିଁ ; ହିମନାଶରେ ଦିନମୁଖ ନିର୍ମଳ ହୋଇ ଉଠିଲା ; ମଧୁକରଗଣ ମକରନ୍ଦ ପାନାଶୟରେ କମଳାକର ସରୋବରକୁ ଧାବମାନ ହେଲେ ; ହଂସ କାରଣ୍ଡବାଦି ଜଳଚର ପକ୍ଷିଗଣ ପଙ୍କିଳ ବନରେ କଳରବ କରି କେଳି କରିବାକୁ ଆରମ୍ଭ କଲେ, ଅଶୋକ ତରୁ କି ପୁଷ୍ପ କି ନବପଲ୍ଲବ ଉଭୟ ମଧ୍ୟ ସ୍ୱାଭାବିକ ଶୋଭମାନ ହୋଇ ଉଠିଲା ।

2. ଏଥି ଅନ୍ତେ ଶଙ୍ଖବହ ସୁମାଳ ଅମ୍ବର,
ପୁଷ୍ପକ ବିମାନେ ହେଲେ ଭେଦି ବାରିଦର ।
ନୟନେ ପଡ଼ନ୍ତେ ଉତ୍ତ-ଆକର ଅର୍ଣ୍ଣବ,
ସୀତାଙ୍କୁ ଦେଖିଲେ ବାଣୀ ରହସ୍ୟେ ଗୁପତ ।
ବିବେହ ନଦୀ ଦେଖି ମଳୟ ପର୍ଯ୍ୟନ୍ତ ।
ବିଭୁକ୍ତ ସେତୁରେ ମୋର ସିନ୍ଧୁ ଫେନବନ୍ତ ।

ଯେସ୍ଥଳେ ଶରଦେ ଗୁରୁ ଭାସ୍ୱ ବିମଣ୍ଡିତ,
ଗଗନ ଦିଶଇ ଛାୟାପଥେ ବ୍ୟାପ୍ତିଶ୍ରିତ ।

3. ସମ୍ପୂର୍ଣ୍ଣରେ ଏହିଭଳି ଗ୍ରହ ଅଛି ନିଶ୍ଚୟ କରି କୋହି ଯାଇ ନ ପାରେ । ଏ ପର୍ଯ୍ୟନ୍ତ ୪୬ ଗୋଟି ଆବିଷ୍କୃତ ହୋଇ ଅଛନ୍ତି । ଅନ୍ୟାନ୍ୟ ଗ୍ରହ ଅପେକ୍ଷା ବୁଧ ଗ୍ରହ ସୂର୍ଯ୍ୟର ନିକଟବର୍ତ୍ତୀ; ତହିଁ ଉତ୍ତାରୁ ଶୁକ୍ର, ପୃଥିବୀ, ମଙ୍ଗଳ, ବୃହସ୍ପତି, ଶନି, ଇରେନ୍ସ ଓ ନେପଚ୍ୟୁନ ଗ୍ରହ ଯଥାକ୍ରମରେ ସୂର୍ଯ୍ୟମଣ୍ଡଳ ନିକଟରୁ ଉତ୍ତରୋତ୍ତର ଅଧିକ ଦୂରରେ ଅବସ୍ଥିତ ରହି ତାଙ୍କ ଚତୁର୍ଦ୍ଦିଗରେ ପରିଭ୍ରମଣ କରୁ ଅଛନ୍ତି ।

4. ସୁନୀଳ ସାଗର ଗର୍ଭେ ଶ୍ୱେତ ଦ୍ୱୀପ,
ଅଜେୟ ଜଗତେ ନାମ ବ୍ରିଟେନିୟା ।
ପ୍ରାକାର ଯାହାର, ନୀଳ ପାରାବାର,
ଅଖିଳ ଅବନୀ ମଧ୍ୟେ ମାନନୀୟା,
ଅଖିଳ ଅବନୀ ପ୍ରତି ପୂଜନୀୟା ।
ଅଜେୟ ଜଗତେ ବ୍ରିଟିଶ କେଶରୀ,
ବ୍ୟାପିଛି ଯା ଯଶ ସର୍ବ ମର୍ତ୍ତ୍ୟପୁର,
ଜଗତ ବିଜୟୀ, ସୁଧାଂଶୁ ତପନ,
ବିରାଜେ ତେ ଯାଏ ଯେତେ ଦୂର,
ବୁର୍ଜିୟ ସର୍ବଶ୍ରେଷ୍ଠ ଶ୍ୱେତ ଦ୍ୱୀପ ଶୂର ।

III. Write an essay in Uriya on —"*The covering of animals.*"

WEDNESDAY, 18TH DECEMBER, 10 A M TO 1 P M

FRENCH · TEXT-BOOKS AND GRAMMAR.

I 1 Write the plural of the following substantives—verrou, carnaval, portail, émail, voix, jeu, ciel, aïeul

2 Give the feminine of—paysan, épais, exprès, neuf, beau, fou, blanc, frais, sec, accusateur, vengeur, chasseur, serviteur.

II. 1. Conjugate the present indicative and the imperative of the verb haïr.

2. State the difference between aimé-je and aimai je

3 What are the present participle, the past participle, and the present indicative of the following verbs —coudre, battre, naître, suivre, vaincre, luire, mettre

III. 1. Compose short sentences including the following words taken (*a*) in the masculine and (*b*) in the feminine gender —foudre, exemple, hymne, couple, aigle.

2. Write three different sentences exemplifying the three different manners of writing the word *mille*.

IV. What are the different rules for the formation of compound substantives?

V. Write the appropriate prepositions after the following verbs:—Aimer, différer, discontinuer, répugner, exhorter, espérer, souhaiter, persister, soupçonner. Exemplify by short sentences.

VI. Give the rules with examples of the past participle 1. used without the auxiliary verb, 2. with the auxiliary verb, 3. used as a part of an impersonal verb.

VII. Of the following sentences correct those which are wrong:—

(1.) Les peines que cette affaire m'a causées. (2.) Ce travail m'a coutèe une peine infinie. (3.) Rendez grâces au ciel qui nous en a vengé. (4.) Le peu d'affection que vous lui avez témoignée, l'a découragé. (5.) Il nous a recommandé de lui écrire. (6.) Ils se sont proposés de l'accompagner.

VIII. 1. Mark the difference between—danger éminent and danger imminent; entendre raillerie and entendre la railleria; durant and pendant; à la campagne and en campagne.

2. Correct the following phrases:—rémouler un couteau; sucrez vous; sans dessus dessous; j'ai très faim; cet enfant est bien éduqué, cette affaire est conséquente.

IX. 1. What is the description of Termosiris given by Fénélon?

2. Annotate:—Sésostris, Métophis, Bocchoris, Antiphates, les Lapithes, Leucothoë.

X. 1. Give the meaning of marguillier and chevecier.

2. Who, do you think, dined more copiously, the prelate or the author?

3. Relate the incident which was the cause of the poem (*Le Lutrin*).

4. Explain the words in italics in the following:—

(*a*) Tient un verre de vin qui rit dans *la fougère*.
(*b*) Mais le barbier qui *tient* les moments précieux.
(*c*) Va *tenir* quelquefois un *brelan* défendu.
(*d*) Le *Carme*, le *Feuillant*, s'endurcit aux travaux.
Et la règle déjà se remet dans *Clairvaux*.
(*e*) How does Boileau describe the *fame*?

XI. 1. What model did Racine follow in picturing Nero?

2. What are the principal qualities of the poetry of Racine?

XII. On what connection does Bossuet express the following ideas?

(1.) Leur donne pour récompense l'empire du monde, présent de nul prix. (2.) Dans l'approche d'un si beau jour, et dès la première atteinte d'une si vive lumière combien promtement disparaissent toutes les fortunes du monde? Que l'éclat de la plus belle victoire paraît sombre! (3.) Trace the principal qualities of the Prince of Condé, as described by Boileau.

XIII. 1. Give in English the equivalents of the following proverbs or expressions:—(*a*) Cà n'y fait ni chaud ni froid. (*b*) Quand on

parle du loup, on en voit la queue (*c*) Il a donné de grands coups d'épée dans l'eau. (*d*) Son raisonnement porte à faux.

2. Supply the dashes by appropriate words in the following :—

Il serait bien à désirer que l'on—des reverbères dans cette rue; hier au soir en—de chez mon oncle, j'ai—me casser le cou en—heurtant contre une charette. J'en écrirai—à la municipalité, mais—probable que je ne—pas.

WEDNESDAY, 18TH DECEMBER, 2 TO 5 P.M.

FRENCH: TRANSLATION.

I. Translate into English :—

1. Vous allumez un feu qui ne pourra s'éteindre.
Craint de tout l'univers, il vous faudra tout craindre,
Toujours punir, toujours trembler dans vos projets,
Et pour vos ennemis compter tous vos sujets.
Ah ! de vos premiers ans l'heureuse expérience
Vous fait-elle, Seigneur, haïr votre innocence ?
Songez-vous au bonheur qui les a signalés ?
Dans quel repos, ô ciel, les avez-vous coulés !
Quel plaisir de penser et de dire en vous-même :
" Partout, en ce moment, on me bénit, on m'aime ;
" On ne voit point le peuple à mon nom s'alarmer ;
" Le ciel dans tous leurs pleurs ne m'entend point nommer
" Leur sombre inimitié ne fuit point mon visage ;
" Je vois voler partout les cœurs à mon passage."

2. Ce discours aussitôt frappe tous les esprits,
Et le prélat charmé l'approuve par des cris.
Il veut que, sur-le-champ, dans la troupe on choisisse
Les trois que Dieu destine à ce pieux office :
Mais chacun prétend part à cet illustre emploi.
" Le sort, " dit le prélat, " vous servira de loi.
" Que l'on tire au billet ceux que l'on doit élire."
Il dit : on obéit, on se presse d'écrire.
Aussitôt trente noms, sur le papier tracés,
Sont au fond d'un bonnet par billets entassés.
Pour tirer ces billets avec moins d'artifice,
Guillaume, enfant de chœur, prête sa main novice :
Son front nouveau tondu, symbole de candeur,
Rougit, en approchant, d'une honnête pudeur.
Cependant le prélat, l'œil au ciel, la main nue,
Bénit trois fois les noms, et trois fois les remue.
Il tourne le bonnet ; l'enfant tire, et Brontin
Est le premier des noms qu'apporte le destin.
Le prélat en conçoit un favorable augure,
Et ce nom dans la troupe excite un doux murmure.

3. Il chantait les fleurs dont le printemps se couronne, les parfums qu'il répand, et la verdure qui naît sous ses pas. Puis il chantait les délicieuses nuits de l'été où les zéphyrs rafraîchissent les hommes, et où la rosée désaltère la terre. Il mêlait aussi dans

ses chansons les fruits dorés dont l'automne récompense les travaux des laboureurs, et le repos de l'hiver, pendant lequel la jeunesse folâtre danse auprès du feu Enfin il représentait les forêts sombres qui couvrent les montagnes et les creux vallons, où les rivières, par mille détours, semblent se jouer au milieu des riantes prairies Il apprit ainsi aux bergers quels sont les charmes de la vie champêtre, quand on sait goûter ce que la simple nature a de gracieux Bientôt les bergers avec leurs flûtes, se virent plus heureux que les rois, et leurs cabanes attiraient en foule les plaisirs purs qui fuient les palais dorés

4 Qu'il embellît cette magnifique et délicieuse maison, ou bien qu'il munît un camp au milieu du pays ennemi, et qu'il fortifiât une place, qu'il marchât avec une armée parmi les périls, ou qu'il conduisît ses amis dans ces superbes allées au bruit de tant de jets d'eau qui ne se taisaient ni jour ni nuit, c'était toujours le même homme, et sa gloire le suivait partout Qu'il est beau après les combats et le tumulte des armes, de savoir encore goûter ces vertus paisibles et cette gloire tranquille qu'on n'a point à partager avec le soldat non plus qu'avec la fortune, ou tout charme et rien n'éblouit, qu'on regarde sans être étourdi ni par le son des trompettes, ni par le bruit des canons, ni par les cris des blessés, où l'homme paraît tout seul aussi grand, aussi respecté que lorsqu'il donne des ordres et que tout marche à sa parole!

5 J'admire, ajoutait-il,
Et l'air de confiance et l'éternel babil
De ces Messieurs à peine échappés de l'enfance,
Car ils ont d'un seul pas franchi l'adolescence.
Ils semblent tout savoir, à leur ton, leur maintien,
Mais ils ne savent rien n'apprendront jamais rien,
Parlent avec mépris de tout ce qu'ils ignorent,
Et de leur nullité publiquement s'honorent,
Êtres inconséquents, neufs, blasés, et flétris,
Tels que des fruits sans goût, avant le temps mûris

6 Qu'on se figure un pays sans verdure et sans eau, un soleil brûlant, un ciel toujours sec, des plaines sablonneuses, des montagnes encore plus arides, sur lesquels l'œil s'étend, et le regard se perd, sans pouvoir s'arrêter sur aucun objet vivant; une terre morte et, pour ainsi dire, écorchée par les vents, laquelle ne présente que des ossements, des cailloux jonchés, des rochers debout ou renversés, un désert entièrement découvert où le voyageur n'a jamais respiré sous l'ombrage, où rien ne l'accompagne, rien ne lui rappelle la nature vivante solitude absolue, mille fois plus affreuse que celle des forêts

II Translate into French —

1 Homeward by hundred thousands, column-deep,
Broad square loose squadron, rolling like the flood
When mighty torrents from their channels leap
Rushed through the land the haughty multitude,
Billow on endless billows; on through wood,

O'er rugged hills, down sunless, marshy vale,
To death-devoted moved, to clangour rude
Of drum and horn, and dissonant clash of mail,
Glancing disastrous light before that sunbeam pale.

2. We sometimes saw a blue line suddenly drawn across a field of pure white; then another above it, and another, all parallel, and attended each time with a loud crash like cannon, producing together the effect of long-protracted peals of thunder. At other times some portion of the vast field of snow, or rather snowy ice, gliding gently away, exposed to view a new surface of purer white than the first, and the cast-off drapery gathering in long folds, either fell at once down the precipice, or disappeared behind some intervening ridge, which the sameness of colour rendered invisible, and was again seen soon after in another direction, shooting out of some narrow channel a cataract of white dust.

THURSDAY, 19TH DECEMBER, 10 A.M. TO 1 P.M.

ALGEBRA AND GEOMETRY.

I. Prove that triangles on the same base and between the same parallels are equal in area. Show how to divide a triangle into four parts of equal area by straight lines drawn through a point in a side of the triangle.

II. ABC is a triangle, obtuse-angled at C, and AD is drawn perpendicular to BC produced. Prove that the square on AB exceeds the sum of the squares on BC and CA by twice the rectangle BC, CD.

KLM is a triangle, N the middle point of LM. Prove that $KL^2+KM^2=2\,LN^2+2\,KN^2$.

III. Prove that the opposite angles of a quadrilateral inscribed in a circle are supplementary.

AB and AC are two fixed straight lines in which B and C are fixed points. Through any point P in AB or AB produced PQ is drawn parallel to BC, meeting AC or AC produced in Q, and through P and Q are drawn perpendiculars to AP and AQ respectively. If these perpendiculars meet in R, show that the locus of R is a straight line.

IV. Show how to circumscribe a circle about a given triangle.

ABC is a triangle, O the intersection of the perpendiculars from the angular points on the opposite sides, AH the diameter through A of the circle circumscribing the triangle. If AD, the perpendicular on BC, meets the circumscribed circle in G, prove that $OD=DG$, and that if HO be joined it will pass through the middle point of BC.

V. Prove that if two triangles have the sides taken in order about each of their angles proportional, they shall be similar, those angles being equal which are opposite to the homologous sides.

ABC is an isosceles triangle, right-angled at C; D, E, F are the middle points of the sides BC, CA, AB respectively, and from F perpendiculars are drawn to AD and BE respectively, meeting DE in G and H. Prove that G and H are the points of trisection of DE.

VI. Show how to determine the sign of the expression ax^2+bx+c for real values of x.

Prove that if x is real the expression $\frac{(x-a)(x-c)}{x-b}$ is capable of assuming all values, if a, b, c, are in ascending order of magnitude.

VII. 1. Solve the equations:—

$$y+\sqrt{x^2-1}=2$$

$$\sqrt{x+1}+\sqrt{x-1}=\frac{2}{\sqrt{y}}=\frac{2}{\sqrt{y}}.$$

2. The area of a rectangular field is $7\frac{1}{2}$ acres, and the sum of the lengths of two adjacent sides exceeds the length of either diagonal by 110 yards. Find the lengths of the sides.

VIII. Assuming that the relation $a^m \times a^n = a^{m+n}$ is always true whatever m and n may be, show how to find the meaning of $a^{\frac{1}{n}}$, $a^{\frac{m}{n}}$ a^0, a^{-m}, whatever m and n may be, prove that $(a^m)^n = a^{mn}$ for all values of m and n.

Extract the square root of $\frac{(x+y)^2}{y}-x^{\frac{1}{4}}y^{-\frac{1}{4}}(x-x^{\frac{1}{4}}y^{\frac{3}{4}}+y)$

IX. Show how to find the sum of the squares of the first n natural numbers. Prove that the sum of the squares of the first n odd numbers is $\frac{n(4n^2-1)}{3}$.

X. Show how to find the number of combinations of n different things taken r at a time, without assuming the formula for the number of permutations of n things taken r at a time. Find how many numbers greater than 1000 can be formed from the digits 112340, taken four at a time.

XI. Show how to find the greatest term in the expansion of $(x+a)^n$, n being a positive integer. Expand $(a^2-2ax)^{\frac{3}{2}}$ in ascending powers of x as far as x^5, and write down the general term.

THURSDAY, 19TH DECEMBER, 2 TO 5 P.M.

TRIGONOMETRY AND EUCLID, BOOK XI.

I. Prove that the angle subtended at the centre of a circle by an arc equal in length to the radius is constant. Explain the method of measuring angles founded on this theorem.

II. 1. Prove that $\sin(A+B)=\sin A\cos B+\cos A\sin B$, taking A to lie between 90° and 135° and $A+B$ to lie between 315° and 360°.

2. If the sum of four angles is 180,° prove that the sum of the products of their sines taken two together is equal to the sum of the products of their cosines taken two together.

III. Prove the following identities.

1. $\sin A(\cos 2A+\cos 4A+\cos 6A)=\sin 3A\cos 4A$.

2. $\cot\frac{\pi}{8}-\tan\frac{\pi}{8}=2$

3. $\sin^2\alpha + \sin^2\beta + \sin^2\gamma + \sin^2(\alpha + \beta + \gamma) =$
$2\{1 - \cos(\beta + \gamma)\cos(\gamma + \alpha)\cos(\alpha + \beta)\}$.

IV. 1. Find a general expression for all angles having a given tangent.
Solve $\cot\theta - \tan\theta = 2\sqrt{3}$

2. If $(1+\cos A)(1+\cos B)(1+\cos C) = (1-\cos A)(1-\cos B)(1-\cos C)$, prove that each $= \pm\sin A \sin B \sin C$.

V. 1. Find the limits between which A must lie that

$$2\cos\frac{A}{2} = -\sqrt{1+\sin A} - \sqrt{1-\sin A}.$$

2. Find by general reasoning how many values there are of $\sin\frac{\theta}{3}$ when its value is deduced from that of $\cos\theta$.

VI. 1 Define the characteristic of a logarithm. Obtain the characteristics of $\log_{10} \cdot 005$ and $\log_3 \cdot 03$.

2. Given $\log_{10}3 = a$, $\log_{10}2 = b$, find $\log_3 5$ and $\log_6(\frac{1}{3})$.

3. What is the value of $a^{\log_a b}$? Sum the infinite series whose $(r+1)$th term is $\frac{(2\log 3)^r}{\lfloor r}$.

VII. 1. Given a, b, A, and that $a > b\sin A < b$, solve the triangle.

2. Given $A = 34°16'$, $a = 361$, $b = 555 \cdot 257$, find B and C.
$\log 19 = 1 \cdot 2787536$, $\log 55525 = 4\ 7444886$, diff $= 78$,
$L\sin 34° 16' = 9\ 7505434$, $L\sin 60° = 9\ 9375303$.

VIII. 1. Find an expression for the radius of an escribed circle of a triangle.

2. With the usual notation, prove that

$$2\sqrt{r r_a r_b r_c} = R^2(\sin 2A + \sin 2B + \sin 2C)$$

3. In any triangle, P is the intersection of the perpendiculars from the angles on the opposite sides, and Q the centre of the circle circumscribing BPC. Show that the radius of the circle circumscribing $BQC = \frac{R}{2\cos A}$, where R is the radius of the circle about the given triangle.

IX. A ship sailing with uniform speed in a straight line is observed by a man in a lighthouse to be due S. of him; in a quarter of an hour, it becomes due E.; and after another quarter of an hour, it bears N E. Find the course that the ship was steering. When was the ship nearest to the light-house?

X. If one of two parallel lines be normal to a plane, the other shall also be normal to it.

XI. 1. If a right line be normal to a plane, any plane passing through it shall be perpendicular to that plane.

2. OA bisects the angle formed by the right lines OB, OC. OP is any right line equally inclined to OB, OC. Show that the plane POA is perpendicular to the plane BOC. Thence deduce that if OP be equally inclined to the three co-planar lines OA, OB, OC, it is normal to the plane containing them.

FRIDAY, 20TH DECEMBER, 10 A.M. TO NOON.

HISTORY OF GREECE AND ROME.

I. Describe briefly the changes in the constitution of Athens associated with the following names:—Codrus, Hippomenes, Solon, Pisistratus, Cleisthenes.

II. Give a brief account of the life of Alcibiades.

III. (1.) What State held the leadership of the Greeks in resisting the Persian invasion? (2.) How came the leadership to change hands? (3.) What new confederacy then took shape, and how did it ultimately fail?

IV. Give the dates, combatants, and political consequences of the following battles:—Salamis, Leuctra, Chæroneia, Telamon, Zama, Pharsalus.

V. Compare the Roman with the Grecian colonies in regard to the following points:—(1.) Causes of foundation. (2.) Their relation to the Mother State. (3.) Their after influence on the history of the Mother State.

VI. Describe briefly Hannibal's career from the crossing of the Alps to the battle of Cannæ. (A sketch map to be given showing the position of the various battlefields, etc., on line of march.)

VII. Who were the Gracchi? With what evils did they try to cope? Mention their chief reforms and give the fate of the reformers.

VIII. (1.) What is the significance of the crossing of the Rubicon in Roman History? (2.) How was it that Octavianus succeeded when Cæsar failed?

FRIDAY, 20TH DECEMBER, 12-5 TO 2-5 P.M.

HISTORY OF ENGLAND.

I. Give a list, with dates, and a very brief notice, of the chief enactments passed during the 17th century affecting the relations of the Crown and the Parliament.

II. Show by means of genealogical charts the respective claimt of James I. and George I. to the English crown, and explain how is became united to that of Scotland in the person of the former king.

III. Narrate very briefly the events which took place in England between the death of Oliver Cromwell and the coronation of Charles.

IV. Write brief notes about the following:—(1.) The Protestation. (2.) The Grand Remonstrance. (3.) The Solemn League and Covenant.

V. Where are the following places? Give in each case the date of the battle fought there, the war in which each occurred, and the name of the victorious general:—Hohenlinden, Albuera, Navarino, Almanza, St. Privat.

VI. Enumerate the causes of the following wars and give the dates, names and main terms of the treaties by which they were conclud-

ed :—(1.) War of the Austrian Succession. (2.) The Seven Years War. (3.) The Crimean War.

VII. Draw a map of North America showing the English possessions there prior to the War of Independence, and mark on it with dates the sites of the chief battles fought during that war.

VIII. Give a brief sketch of the ecclesiastical quarrels during the reign of Charles I.

FRIDAY, 20TH DECEMBER, 3 TO 5 P.M.

LOGIC.

I. 1. What points should be attended to in describing the logical characters of (*a*) terms and (*b*) propositions?

2. Describe the logical characters of the following :—

TERMS :—Examinee, blind.

PROPOSITIONS :—Few men succeed in life. None but the industrious and intelligent deserve to pass.

II. 1. State with reasons if abstract terms are to be treated as connotative or non-connotative.

2. Give two series of four terms each, in which each term has greater extension and less intension than the other.

III. State the rules or conditions to which logical division should conform. Why are general and not singular terms capable of logical division?

IV. Why is simple conversion inapplicable to O?

Is contrapositive conversion applicable to I? Give your reasons.

V. 1. *All men are not happy* Draw the inferences that follow by opposition from (*a*) the truth and (*b*) the falsity of this proposition.

2. *Not all human actions are prompted by the best of motives.* Contraposit

3. *No human work is perfect.* Give the obverse of the contradictory.

VI. 1. Prove that from a particular major and a negative minor, no inference follows.

2. *Some students that are anxious to pass the F.A. examination are not industrious.* Supply the premises to the above conclusion in the third figure and reduce the mood by the direct method to the first figure.

VII. Give a concrete example of (1), a Destructive Hypothetical syllogism and (2), a Disjunctive syllogism *in modus ponendo tollens;* and reduce each to its corresponding categorical form

VIII. Explain the following fallacies giving an example of each :—*Illicit process of the minor term; undistributed Middle; Composition.*

B.A. DEGREE EXAMINATION, 1889-90.

WEDNESDAY, 20TH NOVEMBER 1889, 10 A.M. TO 1 P.M.

ENGLISH POETRY.

Hamlet; Paradise Regained, bks. III. and IV.; Tennyson's *Locksley Hall, The Lotus Eaters, Dream of Fair Women.*

I. 1. What do we gather from the play of *Hamlet* as to (*a*) the historic period when the events occurred; (*b*) the season of the year with which the play is concerned; and (*c*) the dramatic time occupied by the events narrated?

2. What suggestions do we obtain from *Hamlet* as to Shakespere's views of the drama and theatre of his time?

II. 1. Professor Dowden writes (*a*) "Hamlet's power of acting was crippled by his habit of 'thinking too precisely on the event'"; and (*b*) "He (Hamlet) is not incapable of vigorous action—if only he be allowed no chance of thinking the part away into an idea." Illustrate these remarks.

2. The king endeavours to convince Hamlet that he ought to forget his dead father, and, later on, he tries to prove to Laertes that he might too readily forget his dead father and the duty of revenging him. Give the substance of these two speeches.

III. 1. What glimpses into the character of Ophelia do we obtain from the expressions used regarding her by Laertes?

2. Illustrate the character of Polonius by quotations from *Hamlet*, and explain apparent inconsistencies in that character.

IV. 1. In what sense, now obsolete, does Shakespere, in the play of *Hamlet*, use the following words:—*obsequious, handsaw, tropically, jump.* State also their modern meanings.

2. In what connection and by whom were the following sentences spoken:—

(*a*) "Heaven hath pleased it so,
To punish me with this, and this with me."

(*b*) "He raised a sigh so piteous and profound,
That it did seem to shatter all his bulk,
And end his being."

(*c*) "My words fly up, my thoughts remain below;
Words, without thoughts, never to heaven go."

3. Write brief notes on the following passages:—

(*a*) "And they in France of the best rank and station
Are of a most select and generous chief in that."

(*b*) "Do not believe his vows for they are brokers:—
Not of the eye which their investments show;
But mere implorators of unholy suits,
Breathing like sanctified and pious bonds,
The better to beguile."

(*c*) "Drink off this potion:—Is thy union here?
Follow thy mother."

V. 1. Explain the following passages:—

(a) "Himself the primrose path of dalliance treads,
And recks not his own rede."

(b) "If he steal aught, the while this play is playing,
And 'scape detecting, I will pay the theft."

(c) "*Oph.* You are a good chorus, my lord.
Ham. I could interpret between you and your love,
If I could see the puppets dallying."

(d) "The ocean overflowing of his list,
Eats not the flats with more impiteous haste."

2. Unfold the play upon words in the following passages:—

(a) "*Hor.* O day and night, but this is wondrous strange!
Ham. And, therefore, as a stranger give it welcome."

(b) "*King.* Now, Hamlet, where's Polonius?
Ham At supper.
King. At supper? Where?
Ham. Not where he eats, but where he is eaten; a certain convocation of politic worms are e'en at him. Your worm is your only emperor for diet."

VI. Paradise Regained is generally regarded as inferior as an epic poem to Paradise Lost. Point out how far this inferiority arises from the subject of the poem and how far from Milton's treatment of it

VII. 1. Summarize the arguments used by Satan in urging the Son of God to seek glory and those used by Him in reply.

2. For what purpose did Milton introduce (a) the description of Athens and (b) the thunderstorm at night followed by a bright peaceful morning.

VIII. By means of paraphrase explain:—

1. And for a while the knowledge of his art
Held me above the subject.

2. Her warbling voice, a lyre of widest range,
Struck by all passion, did fall down and glance
From tone to tone, and glided thro' all change
Of liveliest utterance.

3. Because all words, tho' cull'd with choicest art,
Failing to give the bitter of the sweet,
Wither beneath the palate, and the heart
Faints, faded by its heat.

IX. Show how each of the following passages is connected in thought with what precedes it, and expand it so as to bring out its full meaning:—

1. Till the war drum throbb'd no longer and the battle flags were furl'd
In the Parliament of man, the Federation of the world.

2. They also serve who only stand and wait.

3. As if hypocrisy and nonsense
Had got th' advowson of his conscience.

4. From these and all long errors of the way

In which our wandering predecessors went

Bacon like Moses led us forth at last

X Describe the mental state which Tennyson has dramatised in the Lotus-Eaters

XI 1 What is the general construction of Milton's sonnets? 2 Point out the differences in structure in the six sonnets of your text 3 Explain the statement that the sonnet attempts to combine two effects somewhat incongruous in their nature

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WEDNESDAY, 20TH NOVEMBER, 2 TO 5 P M

ENGLISH PROSE

Foster's *Essay on Decision of Character*, Sir Henry Taylor's *Notes from Life*, Dowden's *Life of Southey*

I 1 Mention three of the advantages possessed by a person having decision of character

2 What three 'circumstances adapted to confirm such a character" are specified by Foster? What, and in illustration of which of these, is the simile of the ivy?

3 'A man's own *conscientious approbation* of his conduct must be of vast importance to his decision in the outset, and his persevering constancy' What reflections does he make on this statement?

II 1 In illustration of what are Napoleon, Luther, and Abdiel, respectively, referred to? Show your acquaintance with the incident or characteristic in each case

2 How does Foster contrast the characters of Macbeth and Lady Macbeth? In illustration of what does he cite her?

3 The character or action of Satan as delineated in *Paradise Lost* is adduced twice in Foster's *Essay*—in illustration or proof of what in each case?

III 1 "God sends misery and misfortune into the world for a purpose" What topic led up to this remark and what are the ends for which distress is sent?

2 What is Sir Henry Taylor's maxim as to our taking credit to ourselves for generosity?

3 Before Milton held himself equipped for his great enterprise in Poetry, what did he deem indispensable in addition to "industrious and select reading"?

4 What is the purport of the extract from Shakespere's 111th sonnet, and in proof of what is it cited?

IV 1 Explain and state in what context each of the following occurs —(*a*) "By conspiring with your friend to defraud his future self, you naturally incur his future displeasure" (*b*) "The insult lighted on armour proof' (*c*) 'What is conducive to wisdom is that the coins should not be hidden away under the counters" (*d*) "Mr Wordsworth's advice should be taken to heart" (*e*) "There was no writing public nor reading populace in that age"

2. Give the meaning of :—(*a*) "The gallows has fallen out of favour." (*b*) "In some regions we must sink the shaft." (*c*) "Early failure acts as a sort of narcotic stimulant."

3. Paraphrase so as to make the meaning quite clear :—

"If he was still at every hour, when it came, fated to feel the attractions of the fine arts but the second claim, they might be sure of their revenge."

V. 1. To illustrate what does Sir H. Taylor refer to Burns; John Wesley; "Noah's beasts"; *Christabel*; *Alexander's Feast*; Milton's 23rd sonnet?

2. From what author, and what poem, is each of the following quotations taken :—

(*a*) If life should a well-ordered poem be,
Mine the Pindaric way I'll make.

(*b*) Yet leaving here a name I trust
That will not perish in the dust.

(*c*) The last infirmity of noble minds

3. What is the 'last infirmity'?

VI. 1. Write brief explanatory notes on the following extracts :—

(*a*) 'The new sentiment of the time, a sentiment which found in Werther and Eloisa its dialect, high pitched, self-conscious, rhapsodical and not wholly real.' (*b*) 'They, already preparing to tie their hair in tails, were looking forward to the great world.' (*c*) 'Who has not experienced, when first he has touched a foreign soil, how nature purges the visual nerve with lucky euphrasy.' (*d*) 'The poet in Southey died young.' (*e*) 'He had just departed in the odour of dilettanteism.'

2. Supply the omitted names in the following extract :—

A goodly company of friends becomes familiar to us, as we read Southey's correspondence ;———, wherever he was, 'always doing something else';——— for play and pathos and subtle criticism glancing amid the puns; ———for generous admiration and kindred enthusiasms; ———for rarer sympathy and sacreder hopes and fears.

VII. 1. Describe the effect of the study of Epictetus upon the mind and moral nature of Southey.

2. Enumerate Southey's arguments against the Catholic Emancipation Bill as quoted by his biographer.

3. Give a brief summary of the political measures advocated by Southey in the *Quarterly Review*, as collected by his son.

VIII. 1. Describe the influences which gradually changed the 'young and ardent republican,' 'the disciple of Rousseau,' for whom 'the church-gate was perjury,' into the 'Tory churchman,' the 'champion of orthodoxy,' 'who missing his way to Utopia found it at Old Sarum.'

2. Give the substance of the 'picture of Southey drawn by his friend Sir H. Taylor.'

IX Briefly contrast Southey with Byron with reference to temperament, character, sentiments, manner of life, and style and matter of poetry.

Which of Southey's poems is alluded to in each of the following:—(1.) A wild Arabian legend. (2.) An epic poem concerning a Welsh prince. (3.) A poem in which are represented the awful forms of the Hindu Pantheon. (4.) A narrative poem celebrating the fall of the Visigothic monarchy in Spain.

X. Write a brief critique on Dowden's *Southey*, remarking on his style and stating in what respect the biography may be considered defective.

THURSDAY, 21ST NOVEMBER, 10 A.M. TO 1 P.M.

ENGLISH LANGUAGE AND LITERATURE.

1. Too true it is, my time of power was spent
In idly watering weeds of casual growth,
That wasted energy to desperate sloth
Declined, and fond self-seeking discontent;
That the huge debt for all that nature lent
I sought to cancel, and was nothing loth
To deem myself an outlaw, severed both
From duty and from hope—yea, blindly sent
Without an errand, where I would to stray:—
Too true it is, that knowing now my state,
I weakly mourn the sin I ought to hate,
Nor love the law I yet would fain obey:
But true it is, above all law and fate
Is Faith, abiding the appointed day.

II. 1. State briefly the historical causes that made the English language composite with respect to its vocabulary.

2. Distinguish in meaning between *balm* and *balsam*, *frail* and *fragile*, *sure* and *secure*. How do you account for the difference in form of each pair of words derived from the same root?

3. Write short etymological or historical notes on the following words:—*cunning*,—*ecstasy*,—*conscience*,—*carnival*,—*sacrament*,—*classics*.

4. "Almost all the sinister and ill-favoured words which were in the English language in the time of Shakspere owe their origin to this unhappy period." *Earle*.

What is the period here spoken of? Give instances of words whose meanings changed from good to bad at this period.

III. 1. State in general terms the differences between Anglo-Saxon and Modern English with respect to the relative pronoun, the infinitive mood, and the genitive case.

2. Mention the principal suffixes in use in the 12th century for forming the plural of nouns. What causes led to the establishment of *s* or *es* as the chief plural ending?

IV. 1. What conditions must be fulfilled in order that an alphabet may be perfect? Show in what respects the English alphabet does not fulfil these conditions

2 Point out the tendencies in language illustrated by the following changes, and give one additional example of each kind of change:—Knave = O.E. cnapa; four = O.E. feower; dizzy = O.E. dysig; = radish = Lat. radix; diamond = Fr. diamant; alike = O. E. gelic; master = O.E. maister = O.Fr. maître = Lat. magister.

V 1. Explain the difference in the usage of *ye* and *you* in early English. Give the history of the word *its* and account for the erroneous use of *his* as a substitute for the possessive inflection by writers in the sixteenth and seventeenth centuries

2. "*Alms* and *riches* are etymologically no more plurals than are *largess* and *noblesse*." Explain this. Comment on the forms *seamstress*, *punster*, *thine*, and *yours*.

VI. Give the meaning of any *eight* of the following phrases, and place each appropriately in a sentence:—To take one's cue from; to have too many irons in the fire; to take *cum grano salis*; to harp upon the same string; to rule the roost; to die in harness; to have on the hip; to turn over a new leaf; to keep up appearances; the chapter of accidents.

VII. 1. Give, in a sentence or two, an account of any *four* of the following works, and name, with approximate dates, the authors of *four* others:—Mirrour for Magistrates, Diversions of Purley, Rejected Addresses, Anatomy of Melancholy, Tam o' Shanter, Defence of Poesy, Pride and Prejudice, Complete Angler, Toxophilus, Christabel.

2. To what writers do the following appellations refer, and for what reason were they bestowed:—the Great Lexicographer; the Prose Homer of Human Nature; the Addison of the North; the Scottish Chaucer?

3. To what author do we owe the word *euphuism* and what caricature of his book has Scott introduced into one of his novels? Give examples of words similarly formed from the names of works of English authors.

VIII. 1. Comment in detail on one of the following statements:—

(*a*) Chaucer and Gower "borrowed neither imagery nor thought nor plan, seldom even form, from older native models."

(*b*) "Scott may be said to have done for the various phases of modern history, what Shakespere has done for the manifold types of human character."

2. Name three great masters of English prose in the Victorian age with their chief works, and discuss the style of any one of the three.

IX. 1. Say what writer is referred to in each of the following, and explain the several titles and allusions in (*a*):—

(*a*) O thou! whatever title please thine ear,
Dean, Drapier, Bickerstaff, or Gulliver!
Whether thou choose Cervantes' serious air
Or laugh and shake in Rabelais' easy-chair.

(*b*) The wisest, brightest, meanest of mankind.

(*c*) Nature's sternest painter, yet the best.

2. From any author select a play, a long poem, or a standard prose work—which you have not read as a University text-book—and give an analysis of its contents

THURSDAY, 21ST NOVEMBER, 2 TO 3-30 P.M.

ENGLISH COMPOSITION.

Write an essay on the following subject :—

The influence of external nature on the formation of character.

FRIDAY, 22ND NOVEMBER, 10 A.M. TO 1 P.M.

SANSKRIT: TEXT-BOOKS AND GRAMMAR.

I. Paraphrase in Sanskrit :—

1. कथाप्रसङ्गेन जनैरुदाहृतादनुस्मृताखण्डलसूनुविक्रमः ।
तवाभिधानाद्व्यथते नताननः स दुःसहान्मन्त्रपदादिवोरगः ॥

2 मदसिक्तमुखैर्मृगाधिपः करिभिर्वर्त्तयते स्वयंहतैः ।
लघयन्खलु तेजसा जगन्न महानिच्छति भूतिमन्यतः ॥

3 रागिणि नलिने लक्ष्मीं दिवसो निदधाति दिनकरप्रभवां।
अनपेक्षितगुणदोषः परोपकारः सतां व्यसनं ॥

II. Explain the following in English :—

(1) नरम्यमाहार्य्यमपेक्षते गुणं (2) गुणाः प्रियत्वेऽधिकृता न संस्तवः (3) परप्रणीतानि वचांसि चिन्वतां प्रवृत्तिसाराः खलु मादृशां गिरः (4) भास्वन्मध्यनायकमनेकमुक्तानुयातं अपवर्गमार्गमिवहारमुद्वहन्ती (5) नन्दकजिगीषया कृष्णकोपितं कालियमिव कृपाणतां गतं (6) कृतकुक्कुटव्रता अप्यबैडालवृत्तयः

III Explain the allusions in the following :—

(1) युधिष्ठिरो गुरुभयविषण्णहृदयः समरशिरसि सत्यं उत्सृष्टवान् (2) नहुषः परकलत्राभिलाषी महाभुजङ्ग आसीत् (3) पृथुः प्रथमपुरुषः परिभूतवान् पृथिवीं (4) यस्य गुरुर्जामदग्न्यः वीर्यावधूतस्स तदा विवेद प्रकर्षमाधारवशं गुणानां ॥

IV. What internal evidence would you adduce to fix roughly the age of the Harshacharita ?

V 1. What is Bāṇa's description of an ideal village ?

2. Compare Bāṇa's style of description of शरद् with Bhāravi's

VI. 1. Give in English the substance of the discussion between Yudhisthira, Bhīma, and Draupadī.

2. Mention two instances in which Bāṇa and Bhāravi are each indebted to previous authors for their poetic ideas or forms of expression.

VII. Narrate in simple Sanskrit, within the limits of a page and a half, Bāṇa's account of his descent.

VIII. Give the meaning of the suffix in each of the following words and quote two other examples of each kind :—स्थास्नु, राजक, आत्मनीन, भंगुर, जंजपूक.

2. Explain करीषंकष. Give similar form with (*a*) कष् and (*b*) with three other roots.

3. What is the peculiarity in स्तम्बेरम? Give a similar example

4. Distinguish between भोज्यं and भोग्यं, आनाय्यः and आनेयः, अवद्यं and अनुद्यं, वह्यं and वाह्यं, वर्या and वृत्या निशम्य and निशाम्य.

IX. 1. Mention six words which change their gender at the end of Tatpurusha compounds. Give one example of each.

2. What forms does the word पाद assume at the end of Bahuvrīhi compounds. Give examples.

3 Dissolve the following compounds :—

दुरोदरच्छद्मजितां. अनेकराजन्यरथाश्वसंकुलं and अयुग्मच्छदगन्धिः.

4. Give the third person singular present in the (*a*) desiderative of अद्, ग्रद्, and स्मि (*b*) frequentative of स्मृ, स्वप्, and घ्रा.

X. Quote from your text two examples not given in this paper of each of the following Alankaras :—अतिशयोक्ति, निदर्शना, अर्थान्तरन्यास.

(*a*) What is अन्यापदेश ? Quote an example from your text and explain it.

FRIDAY, 22ND NOVEMBER, 2 TO 5 P.M.

SANSKRIT: TRANSLATION.

I. Translate into English :—

1. अथ स मुहूर्त्तादिव प्रांशुना कर्णिकारगौरेण बीध्रकञ्चुकच्छन्नवपुषा समुन्मिषन्माणिक्यपदकबन्धबन्धुरशस्त्रबन्धकृशावलग्नेन हिमशैलशिलाविशालवक्षसा हरवृषककुदकूटविकटांसतटेनोरसा चपलहृषीकहरिणकुलसंयमनपाशमिव हारं बिभ्रता कथयतं यदि सोमवंशसम्भवः सूर्यवंशसम्भवो वा भूपतिरभूदेवंविध इति प्रष्टुमानीताभ्यां सोमसूर्याभ्यामिव श्रवणगताभ्यां मणिकुण्डलाभ्यां समुद्भासमानेन वहद्वदनलावण्यविसरवेणिकाक्षिप्यमाणैरधिकारगौरवाद्दीयमानमार्गेणेव दिनकृतः किरणैः प्रसादलब्धया विकचपुण्डरीकमुण्डमालिकयेव दीर्घया दृष्ट्या दूरादेवानन्दयता नैष्ठुर्याधिष्ठानेऽपि प्रतिष्ठितेन पदे प्रश्रयमिवावनम्रेण मौलिना पाण्डुरमुष्णीषमुद्वहता वामेन स्थूलमुक्ताफलच्छुरणदन्तुरत्सरुं करकिसलयेन कलयता कृपाणमितरेणापनीततरलतां ताडितीमिव लतां शातकौम्भीं वेत्रयष्टिमुन्मृष्टां धारयता पुरुषेणानुगम्यमानो निर्गत्यावोचत् एष खलु महाप्रतीहाराणामनन्तरश्चक्षुष्यो देवस्य पारियात्रनामा दौवारिकः समनुगृह्णात्वेनमनुरूपया प्रतिपत्त्या कल्याणाभिनिवेशीति । दौवारिकः समुपसृत्य कृतप्रणामो मधुरया गिरा सविनयमभाषत आगच्छत प्रविशत दर्शनाय कृतप्रसादो देव इति । बाणस्तु धन्योऽस्मि यदेवमनुग्राह्यं मां देवो मन्यते इत्युक्त्वा तेनोपदिश्यमानमार्गः प्राविशदभ्यन्तरम् ॥.

2. पुराधिरूढः शयनं महाधनं विबोध्यसे यः स्तुतिगीतिमङ्गलैः। अदभ्रदर्भामधिशय्य स स्थलीं जहासि निद्रामशिवैः शिवारुतैः ॥

पुरोपनीतं नृप रामणीयकं द्विजातिशेषेण यदेतदन्धसा।
तदद्य ते वन्यफलाशिनः परं परैति कार्श्यं यशसा समंवपुः ॥
चिचीषतां जन्मवतामलध्वीं यशोवतंसामुभयत्र भूतिम्।
अभ्यर्हिता बन्धुषु तुल्यरूपा वृत्तिर्विशेषेण तपोधनानाम् ॥
तथापि निघ्नं नृप तावकीनैः प्रह्वीकृतं मे हृदयं गुणौघैः।
वीतस्पृहाणामपि मुक्तिभाजां भवन्ति भव्येषु हि पक्षपाताः ॥
इति कथयति तत्र नातिदूरादथ ददृशे पिहितोष्णरश्मिबिम्बः।
विगलितजलभारशुक्लभासां निचय इवाम्बुमुचांनगाधिराजः॥
तमतनुवनराजिश्यामितोपत्यकान्तं नगमुपरि हिमानीगौरमासाद्य जिष्णुः। व्यपगतमदरागस्यानुसस्मार लक्ष्मीमसितमधरवासो बिभ्रतः सीरपाणेः ॥

अनुचरेण धनाधिपतेरथो नगविलोकनविस्मितमानसः।
स जगदे वचनं प्रियमादरान्मुखरतावसरे हि विराजते ॥
अलमेष विलोकितः प्रजानां सहसा संततिमंहसां विहन्तुम्।
घनवर्त्म सहस्रधेव कुर्वन्हिमगौरैरचलाधिपः शिरोभिः ॥

3 अनध्वन्याः काव्येष्वलसगतयः शास्त्रगहनेष्वदुःखज्ञा वाचां परिणतिषु मूकाः परगुणे। विदग्धानां गोष्ठीष्वकृतपरिचर्याश्च खलु ये भवेयुस्ते किं वा परभणितिकण्डूतिनिकषाः ॥

व्यतिषजति पदार्थानान्तरः कोऽपि हेतुर्न खलु बहिरुपा-

धीन् प्रीतयः संश्रयन्ते। विकसति हि पतङ्गस्योदये पुण्डरीकम् द्रवति च हिमरश्मावुद्गते चन्द्रकान्तः ॥
प्रत्यार्द्रीकृततिलकास्तुषारपातैः प्रह्लादं शमितपरिश्रमा दिशन्तः। कान्तानां बहुमतिमाययुः पयोदा नाल्पीयान्बहु सुकृतं हिनस्ति दोषः ॥

II. Translate into Sanskrit:—

1. On the one side is the whole world, on the other Janārdana,—in his essence Janārdana exceeds the whole world. He could by a thought reduce this world to ashes; but the whole world could not reduce him to ashes. Since he is truth, righteousness, modesty, rectitude,—therefore he is Govinda; since he is Krishna, he is victory. The chief of spirits, Janārdana, the soul of beings, imparts activity to the earth, air, and sky, as if in sport. He having made a sacrifice for the Pandavas, deluding as it were the world, wishes to burn up Dhritarāshṭra's infatuated and unrighteous sons. The divine Keśava by his own abstraction, makes the circles of time, of the world, and of the ages continually revolve. This divine being is alone the lord of time, of death and of things movable and immovable. Hari, the great contemplator, though the lord of the whole world, undertakes to perform works like a poor peasant seeking gain. He deceives the world by this display of delusion whereby the men who seek him are bewildered.—Dhritarāshṭra said: "How dost thou know Mādhava, the great lord of the whole world? and how is it that I do not know him? tell me that, Sañjaya" Sañjaya answered; "Hear, O king, thou hast not knowledge; but to me knowledge is not wanting. He who is devoid of knowledge, and sunk in darkness, does not recognise Keśava."

2. Rest! rest! O give me rest and peace!
The thought of life that ne'er shall cease
Has something in it like despair,
A weight I am too weak to bear!
Sweeter to this afflicted breast
The thought of never-ending rest!
Sweeter the undisturbed and deep
Tranquillity of endless sleep!

III. 1. Mention the two principal groups of Epic Poetry, and explain briefly their character.

2. What ancient evidence do we possess concerning the Mahābhārata? Is the plot of the Rāmāyaṇa based on historical facts, or is it an allegory?

3. What are the Naṭasūtras and to whom are they ascribed? Who are named as the nine gems at the court of king Vikramāditya, and can this legend lay claim to historical truth?

4. What is understood by the following terms: Paribhāsha, Vārttika, Gaṇapāṭha and Dhātupaṭha?

FRIDAY, 22ND NOVEMBER, 10 A.M. TO 1 P.M.

GREEK: TEXT-BOOKS AND GRAMMAR.

I. 1. Decline in full :—ἕως—θρίξ—ὕδωρ—σέλας.

2 Give the accusative and genitive singular and the dative plural *only* of—κόρυς—ἄνθος—οὖς—κύων—ναῦς—ἥρως.

II. 1. Conjugate οἶδα in the perfect and pluperfect indicative; τίθημι in the 2nd aorist optative active; ζάω in the present indicative active.

2. Write out the paradigm of the present active of δίδωμι, εἶμι (*I shall go*), and φημί; the 2nd aorist active of βαίνω and ἔχω

III. Give the principal parts (future, aorist active, perfect active and passive, where found,) of—βλώσκω, καίω, ἐγείρω, λανθάνω, πίνω, τέμνω, χέω.

IV. 1. Illustrate with examples, giving the English, the constructions and various meanings of the prepositions—διά, μετά, παρά, πρός, and shew what force each has in composition.

2. In what different ways are the verbal adjectives in—τέος used? Point out how they are formed, and give examples.

V. 1. Distinguish carefully between the various uses of—οὐ, μή, οὐ μή and μὴ οὐ.

2. Shew by means of examples the constructions used with—πρίν, ὅπως, ἀλλάττομαι, διδάσκω, κατηγορέω.

VI. Parse the words underlined in the following :—

1. καὶ γὰρ <u>εἰδυίαισιν</u> ἂν ὑμῖν λέγοιμι.
2. δόμους προσείλους <u>ἦσαν</u>.
3. τοῦ δίκην πάσχεις τάδε;
4. <u>ὦπται</u> πάλαι τάδε.
5. <u>νικώη</u> δ' ὅτι πᾶσιν ὑμῖν μέλλει <u>συνοίσειν</u>.
6. ὑφ' οὗ πεισθέντες τινὰς Ἑλλήνων ἐκείνῳ <u>προεῖσθε</u>.

VII. Translate the following and account for the use of each genitive case :—

1. ἐμοὶ δ' ἔλασσον Ζηνὸς ἢ μηδὲν μέλει.
2. πολλοῦ γε καὶ τοῦ παντὸς ἐλλείπω.
3. λέγοντος ἄν τινος πιστεῦσαι οἴεσθε;
4. Λακεδαιμονίους κακώσαντας τῆς χώρας ἀναχωρεῖν ἐπ οἴκου πάλιν.

VIII. 1. Explain the allusions in the following :—

(a) ἔσται δὲ θνητοῖς εἰς ἀεὶ λόγος μέγας
τῆς σῆς πορείας, Βόσπορος δ' ἐπώνυμος
κεκλήσεται.

(*b*) *δισσοὺς τυράννους ἐκπεσόντας ᾠσθόμην.*

(*c*) *ἕκαστον ὑμῶν ἐπαναμνῆσαι βούλομαι τίς ὁ Φωκέας πείσας ὑμᾶς καὶ Πύλας προέσθαι* .....

(*d*) *ἴσχυσαν δέ τι καὶ Θηβαῖοι τουτουσὶ τοὺς τελευταίους χρόνους μετὰ τὴν ἐν Λεύκτροις μάχην.*

2. Write short explanatory notes on

χορηγός, γυμνασίαρχος τῆς φυλῆς, πρυτανεύω.

IX. Translate and explain the construction of the words underlined :—

1. *μή μου προκήδου μᾶσσον ὧν ἐμοὶ γλυκύ.*
   What reading is suggested here ?
2. *τί παρθενεύει δαρὸν, ἐξόν σοι γάμου*
   τυχεῖν μεγίστου ;
3. *κέλευθον ἥνπερ ἦλθες ἐγκόνει πάλιν.*
4. *οὐ γὰρ ἂν αὐτοῖς ἔμελεν μὴ τοῦτο ὑπολαμβάνουσιν.*

X. Give the etymology of *νηπίους, ζάπυροι, οἰστρηλάτῳ, πεδάρσιοι, δάπεδα, τρικυμία.*

XI. Trace the origin of Tragedy at Athens, naming the principal dramatists and the improvements made by each.

or

Mention the other plays forming the Trilogy of which the "Prometheus Vinctus" is a part. What internal evidences are there of its date ?

FRIDAY, 22ND NOVEMBER, 2 TO 5 P.M.

GREEK: TRANSLATION.

I. Translate into English :—

1. *καὶ μὴν ἀριθμὸν, ἔξοχον σοφισμάτων,*
   ἐξηῦρον αὐτοῖς, γραμμάτων τε συνθέσεις
   μνήμης ἁπάντων μουσομήτορ' ἐργάνην·
   κἄζευξα πρῶτος ἐν ζυγοῖσι κνώδαλα
   ζεύγλαισι δουλεύοντα σώμασίν θ', ὅπως
   θνητοῖς μεγίστων διάδοχοι μοχθημάτων
   γένοινθ'· ὑφ' ἅρμα τ' ἤγαγον φιληνίους
   ἵππους, ἄγαλμα τῆς ὑπερπλούτου χλιδῆς.
   θαλασσόπλαγκτα δ' οὔτις ἄλλος ἀντ' ἐμοῦ
   λινόπτερ' ηὗρε ναυτίλων ὀχήματα.
   τοιαῦτα μηχανήματ' ἐξευρὼν τάλας
   βροτοῖσιν, αὐτὸς οὐκ ἔχω σόφισμ' ὅτῳ
   τῆς νῦν παρούσης πημονῆς ἀπαλλαγῶ.
2. ΠΡ. *ἀλλ' ἐκδιδράσκει πάνθ' ὁ γηράσκων χρόνος.*
   ΕΡ. *καὶ μὴν σύ γ' οὔπω σωφρονεῖν ἐπίστασαι.*

ΠΡ. σὲ γὰρ προσηύδων οὐκ ἄν, ὅνθ' ὑπηρέτην.
ΕΡ. ἐρεῖν ἔοικας οὐδὲν ὧν χρῄζει πατήρ.
ΠΡ. καὶ μὴν ὀφείλων γ' ἄν τίνοιμ' αὐτῷ χάριν.
ΕΡ. ἐκερτομησας δῆθεν ὡς παῖδ' ὄντα με.
ΠΡ. οὐ γὰρ σὺ παῖς τε κἄτι τοῦδ' ἀνούστερος,
εἰ προσδοκᾷς ἐμοῦ τι πεύσεσθαι πάρα,
οὐκ ἔστιν αἴκισμ' οὐδὲ μηχάνημ' ὅτῳ
προτρέψεταί με Ζεὺς γεγωνῆσαι τάδε,
πρὶν ἂν χαλασθῇ δεσμὰ λυμαντήρια.
πρὸς ταῦτα ῥιπτέσθω μὲν αἰθαλοῦσσα φλὸξ,
λευκοπτέρῳ δὲ νιφάδι καὶ βροντήμασι
χθονίοις κυκάτω πάντα καὶ ταρασσέτω·
γνάμψει γὰρ οὐδὲν τῶνδέ μ', ὥστε καὶ φράσαι
πρὸς οὗ χρεών νιν ἐκπεσεῖν τυραννίδος.
3 ΠΡ. ἦ μὴν ἔτ' ἐμοῦ, καίπερ κρατεραῖς
ἐν γυιοπέδαις αἰκιζομένου,
χρείαν ἕξει μακάρων πρύτανις,
δεῖξαι τὸ νέον βούλευμ', ὑφ' ὅτου
σκῆπτρον τιμάς τ' ἀποσυλᾶται.
καί μ' οὔτι μελιγλώσσοις πειθοῦς
ἐπαοιδαῖσιν θέλξει, στερεάς τ'
οὔποτ' ἀπειλὰς πτήξας τόδ' ἐγὼ
καταμηνύσω, πρὶν ἂν ἐξ ἀγρίων
δεσμῶν χαλάσῃ, ποινάς τε τίνειν
τῆσδ' αἰκίας ἐθελήσῃ.
ΧΟ. σὺ μὲν θρασύς τε καὶ πικραῖς
δύαισιν οὐδὲν ἐπιχαλᾷς,
ἄγαν δ' ἐλευθεροστομεῖς.
ἐμὰς δὲ φρένας ἐρέθισε διάτορος φόβος·
δέδια γὰρ ἀμφὶ σαῖς τύχαις,
πᾶ ποτε τῶνδε πόγων
χρή σε τέρμα κέλσαντ' ἐσιδεῖν· ἀκίχητα γὰρ ἤθεα καὶ κέαρ
ἀπαράμυθον ἔχει Κρόνου παῖς.

4 ξένους μὲν λέγω—καὶ ὅπως μὴ ποιήσετε ὃ πολλάκις ὑμᾶς ἔβλαψεν· πάντ' ἐλάττω νομίζοντες εἶναι τοῦ δέοντος, καὶ τὰ μέγιστ' ἐν τοῖς ψηφίσμασιν αἱρούμενοι, ἐπὶ τῷ πράττειν οὐδὲ τὰ μικρὰ ποιεῖτε· ἀλλὰ τὰ μικρὰ ποιήσαντες καὶ πορίσαντες τούτοις προστίθετε, ἂν ἐλάττω φαίνηται· λέγω δὴ τοὺς πάντας στρατιώτας δισχιλίους, τούτων δὲ Ἀθηναίους φημὶ δεῖν εἶναι πεντακοσίους, ἐξ ἧς ἄν τινος ὑμῖν ἡλικίας καλῶς ἔχειν δοκῇ, χρόνον τακτὸν στρατευομένους, μὴ μακρὸν τοῦτον, ἀλλ'

ὅσον ἂν δοκῇ καλῶς ἔχειν, ἐκ διαδοχῆς ἀλλήλοις. τοὺς δ' ἄλλους ξένους εἶναι κελεύω.

5 ὑμεῖς δ', ἔφην ἐγώ, διδόντα μὲν καὶ ὑπισχνούμενον θεωρεῖτε Φίλιππον, ἐξηπατηκότα δ' ἤδη καὶ παρακεκρουμένον ἀπεύχεσθε, εἰ σωφρονεῖτε δή, ἰδεῖν. ἔστι τοίνυν νὴ Δί', ἔφην ἐγώ, παντοδαπὰ εὑρημένα ταῖς πόλεσι πρὸς φυλακὴν καί σωτηρίαν, οἷον χαρακώματα καὶ τείχη καὶ τάφροι καὶ τἄλλ' ὅσα τοιαῦτα. καὶ ταῦτα μέν ἐστιν ἅπαντα χειροποίητα, καὶ δαπάνης προσδεῖται· ἓν δέ τι κοινὸν ἡ φύσις τῶν εὖ φρονούντων ἐν αὐτῇ κέκτηται φυλακτήριον, ὃ πᾶσι μέν ἐστιν ἀγαθὸν καὶ σωτήριον, μάλιστα δὲ τοῖς πλήθεσι πρὸς τοὺς τυράννους. τί οὖν ἐστι τοῦτο, ἀπιστία. ταύτην φυλάττετε, ταύτης ἀντέχεσθε. ἂν ταύτην σώζητε, οὐδὲν μὴ δεινὸν πάθητε. τί ζητεῖτ', ἔφην. ἐλευθερίαν.

6. οὗτος τὰ μὲν ἄλλα ὡς ὑβρίζετο καὶ προὐπηλακίζετο ὑπὸ τοῦ δήμου τοῦ τῶν Ὠρειτῶν, πόλλ' ἂν εἴη λέγειν· ἐνιαυτῷ δὲ πρότερον τῆς ἁλώσεως ἐνέδειξεν ὡς προδότην τὸν Φιλιστίδην καὶ τοὺς μετ' αὐτοῦ, αἰσθόμενος ἃ πράττουσιν. συστραφέντες δ' ἄνθρωποι πολλοὶ καὶ χορηγὸν ἔχοντες Φίλιππον καὶ πρυτανευομενοι παρ' ἐκείνου, ἀπάγουσι τὸν Εὐφραῖον εἰς τὸ δεσμωτήριον ὡς συνταράττοντα τὴν πόλιν. ὁρῶν δὲ ταῦθ' ὁ δῆμος ὁ τῶν Ὠρειτῶν, ἀντὶ τοῦ τῷ μὲν βοηθεῖν, τοὺς δ' ἀποτυμπανίσαι, τοῖς μὲν οὐκ ὠργίζετο, τὸν δ' ἐπιτήδειον εἶναι ταῦτα παθεῖν ἔφη καὶ ἐπέχαιρεν. μετὰ ταῦθ' οἱ μὲν ἐπ' ἐξουσίας ὁπόσης ἐβούλοντ' ἔπραττον ὅπως ἡ πόλις ληφθήσεται, καὶ κατεσκευάζοντο τὴν πρᾶξιν· τῶν δὲ πολλῶν εἴ τις αἴσθοιτο, ἐσίγα καὶ κατεπέπληκτο, τὸν Εὐφραῖον οἷα ἔπαθε μεμνημένοι.

7. (Not from text-books.)

Ἐγὼ οὖν δεινὰ ἂν εἴην εἰργασμένος, ὦ ἄνδρες Ἀθηναῖοι, εἰ, ὅτε μέν με οἱ ἄρχοντες ἔταττον, οὓς ὑμεῖς εἵλεσθε ἄρχειν μου, καὶ ἐν Ποτιδαίᾳ καὶ ἐν Ἀμφιπόλει καὶ ἐπὶ Δηλίῳ, τότε μὲν οὗ ἐκεῖνοι ἔταττον ἔμενον, ὥσπερ καὶ ἄλλος τις, καὶ ἐκινδύνευον ἀποθανεῖν, τοῦ δὲ θεοῦ τάττοντος, ὡς ἐγὼ ᾠήθην τε καὶ ὑπέλαβον, φιλοσοφοῦντά με δεῖν ζῆν καὶ ἐξετάζοντα ἐμαυτὸν καὶ τοὺς ἄλλους, ἐνταῦθα δὲ φοβηθεὶς ἢ θάνατον ἢ ἄλλο ὁτιοῦν πρᾶγμα λίποιμι τὴν τάξιν. δεινὸν μέντ' ἂν εἴη, καὶ ὡς ἀληθῶς τότ' ἄν με δικαίως εἰσάγοι τις εἰς δικαστήριον, ὅτι οὐ νομίζω θεοὺς εἶναι, ἀπειθῶν τῇ μαντείᾳ καὶ δεδιὼς θάνατον καὶ οἰόμενος σοφὸς εἶναι, οὐκ ὤν. τὸ γάρ τοι θάνατον δεδιέναι, ὦ ἄνδρες, οὐδὲν ἄλλο ἐστὶν ἢ δοκεῖν σοφὸν εἶναι μὴ ὄντα· δοκεῖν γὰρ εἰδέναι ἐστὶν ἃ οὐκ οἶδεν.

II. Translate into Greek, with accents:—

Briefly, the Lacedaemonians lived Utopian-like, save that they used no other occupation than war, placing all their felicity in the glory of their valour. Hereby it came to pass, that in all enterprises whereof they were partakers, the chief command was granted to them, and all Greece followed their leadership. But the Athenians acted in all points contrary to this; for they sought wealth, and measured the honours of their victories by the profit, they used mercenary soldiers in their wars, and exacted heavy tribute of their subjects, who were for the most part islanders, compelled to obey them, because the Athenian fleet was powerful.

FRIDAY, 22ND NOVEMBER, 10 A.M. TO 1 P.M.

LATIN: TEXT-BOOKS AND GRAMMAR.

I. 1. Distinguish between the *root* of a word, and its *stem*.

2. Give the root of each of the following words, and its meaning:—incendo, perspicax, adolescens, inopia, vidua, integer, prodigus, insimulo.

II. 1. Decline, in the singular,—supellex and peristroma.

2. Give the principal parts of the verbs—metiri, retexere, quiri, fulcire

3. Distinguish between vēnire and vĕnire; between lēvare and lĕvare; between sordidus and sordidatus; between quisque and quisquis; between consulere *aliquem*, *alicui*, and *in aliquem*.

4. Give the etymology of vēnire, vĕnire, lēvare, lĕvare

III 1. Explain and exemplify the use of the subjunctive mood in connection with the relative pronoun.

2. Complete, by adding a clause in the subjunctive:—

(*a*) Non dubium erat . . . . (*b*) Per Catilinam non stetit . . . . . (*c*) Verebar ne . . . . . (*d*) Nihil vereor ut . . . . . .

3 Translate the following extracts and account for the use of the subjunctive mood, whenever it occurs.—

(*a*) Utar, et ex modico, quantum res poscet, acervo
Tollam, nec metuam quid de me iudicet heres
Quod non plura datis invenerit.

(*b*) Distat enim, spargas tua prodigus, an neque sumptum
Invitus facias, neque plura parare labores.

(*c*) Nave ferar magna an parva, ferar unus et idem.

IV. The following words or phrases are Hellenisms or Archaisms or unusual constructions; say what each is, and substitute for each a classical form or construction:—

(1) Officia fungere. (2) subolat. (3) anuis. (4) experibere. (5) factum ignoscam. (6) ut sit necessus. (7) hæc res neutiquam neglectu est mihi. (8) decem minas quas mihi dare pollicitus es (me huc induxerunt).

V. Give, in English, the meaning which the following phrases have in your texts, adding a *brief* explanation only when necessary:—

(1) Esse extra noxiam (2) Relevi dolia (3) Tu nescis id quod scis. (4) Male audire. (5) Annulis donatus. (6) Mihi res ad rastros redit. (7) Ubique hasta et sector. (8) Octavo decimo Kal Febr. (9) Foris sapere. (10) Hostis togatus. (11) Visa est aquilæ senectus.

VI Express in Latin—

(1) The plan you suggest seems to me, as far as I may judge, well calculated to remove the difficulty, and I am almost certain that it will commend itself to the Commander in Chief (2) I should be the last man to make friendship with such a spendthrift (3) If you are unhappy, I am sorry for it, and I wish it were otherwise (4) The more wishes, the more wants (5) I feel as much interest in your welfare as you in mine

VII Translate and explain the grammatical construction of the words in italics —

1 Hic *sponsum* vocat

2 Quid, malum, me *aetatem* censes velle id assimulariet?

3 Græcia capta ferum victorem cepit, et artes
Intulit agresti *Latio*

4 Tiberis, immenso auctu, proruto ponte Sublicio, ac strage obstantis molis refusus, non modo iacentia et plana urbis loca, sed secuta eiusmodi *casuum* implevit

5 Tuum *hominis* simplicis pectus vidimus

6 Qui vero inde reditus *Romam*?

7. Ubi *est* septies millies, quod est in tabulis, quæ sunt ad *Opis*?

VIII Translate and comment on the italicised words —

1 Tenesne memoria *prætextatum* te decoxisse?

2 Tu autem quadringenties sestertium, quod *Idibus* Martiis debuisti, quonam modo ante Kalendas Apriles debere desisti?

3 Habet comœdia *tanto plus oneris quanto veniae minus*

4 Quattuor aut plures *aulæa premuntur* in horas

IX Say *by whom*, *to whom*, and *under what circumstances* the following words were spoken Rewrite them in the form of *obliqua oratio*.

Parendo potius, commilitones, quam imperia ducum sciscitando, res militares continentur, et fortissimus in ipso discrimine exercitus est, qui ante discrimen quietissimus (fuit) Vobis arma et animus sit, mihi consilium et virtutis vestræ regimen relinquite Paucorum culpa fuit, duorum pœna erit Ceteri abolete memoriam fœdissimæ noctis, nec illas adversus senatum voces ullus unquam exercitus audiat

X 1 To what events of his life does Horace allude in his Epistle to Augustus? 2 Trace, from Tacitus (quoting, if you can, his own words), the portrait of Galba 3 How does Cicero meet the charge, that Cæsar s murder was committed at his (Cicero's) own instigation? 4 Cite a very familiar quotation from Terentius

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FRIDAY, 22ND NOVEMBER, 2 TO 5 P M

LATIN TRANSLATION

I Translate into English —

1 Quem tulit ad scenam ventoso Gloria curru,
Exanimat lentus spectator, sedulus inflat
Sic leve, sic parvum est, animum quod laudis avarum
Subruit aut reficit Valeat res ludicra, si me

Palma negata macrum, donata reducit opimum.
Sæpe etiam audacem fugat hoc terretque poetam,
Quod numero plures, virtute et honore minores,
Indocti stolidique et depugnare parati,
Si discordet eques, media inter carmina poscunt
Aut ursum aut pugiles; his nam plebecula plaudit.

2. Quid refert, vivas numerato nuper an olim?
Emptor Aricini quondam Veientis et arvi
Emptum cenat olus, quamvis aliter putat; emptis
Sub noctem gelidam lignis calefactat aenum;
Sed vocat usque suum, qua populus adsita certis
Limitibus vicina refugit iurgia; tamquam
Sit proprium quicquam, puncto quod mobilis horæ
Nunc prece, nunc pretio, nunc vi, nunc morte suprema
Permutet dominos et cedat in altera iura.

3. CH. et nunc quid expectat, Syre? an dum hinc denuo
abeat, quom hic tolerare eius sumptus non queat?
nonne ad senem aliquam fabricam fingit? SY. Stolidus est.
CH. at te adiutare oportet adulescentuli
causa. SY. facile equidem facere possum, si iubes;
etenim quo pacto id fieri soleat, calleo.
CH. tanto hercle melior. SY. non est mentiri meum.
CH. fac ergo. SY. at heus tu, facito dum eadem hæc memineris,
siquid huius simile forte aliquando evenerit,
ut sunt humana, tuos ut faciat filius.
CH. non usus veniet, spero. SY. spero hercle ego quoque:
neque eo nunc dico, quo quicquam illum senserim:
sed siquid, nequid; quæ sit eius ætas, vides:
et ne ego te, si usus veniat, magnifice, Chremes,
tractare possim.

4. SY. Nisi me animus fallit, hau multum a me aberit infortunium:
ita hac re in angustum oppido nunc meæ coguntur copiæ:
nisi aliquid video, ne esse amicam hanc gnati resciscat senex.
nam quod de argento sperem aut posse postulem me fallere,
nil est: triumpho, si licet me latere tecto abscedere.
crucior bolum mihi tantum ereptum tam desubito e faucibus.
quid agam? aut quid comminiscar? ratio de integro ineundast mihi.
nil tam difficilest, quin quærendo investigari possiet.
quid si hoc nunc sic incipiam? nil est. quid sic? tantundem egero.
at sic opinor. non potest. immo optume. eugæ habeo optumam.

5. Fingebat et metum, quo magis concupisceret: prægravem se Neroni fuisse, nec Lusitaniam rursus et alterius exilii honorem expectandum. Suspectum semper invisumque dominantibus qui proximus destinaretur Nocuisse id sibi apud senem principem, magis nociturum apud iuvenem ingenio trucem et longo exilio efferatum: occidi Othonem posse. Proinde agendum audendumque, dum Galbæ auctoritas fluxa, Pisonis nondum coaluisset. Opportunos magnis conatibus transitus rerum, nec cunctatione opus, ubi perniciosior sit quies quam temeritas. Mortem omnibus ex natura æqualem oblivione apud posteros vel gloria distingui; ac si nocentem innocentemque idem exitus maneat, acrioris viri esse merito perire.

6. Sed plurimum trepidationis in publico, ut quemque nuntium fama adtulisset, animum voltumque conversis, ne diffidere dubiis ac parum gaudere prosperis viderentur. Coacto vero in curiam senatu arduus rerum omnium modus, ne contumax silentium, ne suspecta libertas; et privato Othoni nuper atque eadem dicenti nota adulatio. Igitur versare sententias et huc atque illuc torquere, hostem et parricidam Vitellium vocantes, providentissimus quisque vulgaribus conviciis, quidam vera probra iacere, in clamore tamen et ubi plurimæ voces, aut tumultu verborum sibi ipsi obstrepentes.

7. Quod si te in iudicium quis adducat usurpetque illud Cassianum, cui bono fuerit, vide, quæso, ne hæreas. Quamquam illud fuit, ut dicebas quidem, omnibus bono, qui servire nolebant, tibi tamen præcipue, qui non modo non servis, sed etiam regnas, qui maximo te aere alieno ad ædem Opis liberavisti, qui per easdem tabulas innumerabilem pecuniam dissipavisti, ad quem e domo Cæsaris tam multa delata sunt, cuius domi quæstuosissima est falsorum commentariorum et chirographorum officina, agrorum, oppidorum, immunitatium, vectigalium flagitiosissimæ nundinæ.

8. Syngrapha sestertii centiens per legatos, viros bonos, sed timidos et imperitos, sine nostra, sine reliquorum hospitum regis sententia facta in gynæcio est, quo in loco plurimæ res venierunt et veneunt. Qua ex syngrapha quid sis acturus meditere censeo: rex enim ipse sua sponte, nullis commentariis Cæsaris, simul atque audivit eius interitum, suo Marte res suas reciperavit.

(Not from Text-Books.)

9. Cæsar dando, sublevando, ignoscendo; Cato nihil largiendo gloriam adeptus. In altero miseris perfugium; in altero malis pernicies: illius facilitas; huius constantia laudabatur. Postremo, Cæsar in animum induxerat laborare, vigilare; negotiis amicorum intentus, sua negligere; nihil denegare, quod dono dignum esset; sibi magnum imperium, exercitum, novum bellum exoptabat, ubi virtus enitescere posset. At Catoni studium modestiæ, decoris, sed maxime severitatis erat. Non divitiis cum divite, neque factione cum factioso; sed cum strenuo virtute, cum modesto pudore, cum innocente abstinentia certabat: esse, quam videri, bonus malebat: ita, quo minus gloriam petebat, eo magis sequebatur.

II. Translate into Latin:—

The pursuit was stopped by the advance of the Prince of Parma with the main body of the Spanish army; and the English cavalry on their return from the field found their advantage more than compensated by the loss of Sir Philip Sidney, who being mortally wounded in the action was carried off by the soldiers, and soon after died. This person is described by the writers of that age as the most perfect model of an accomplished gentleman that could be imagined. . . . No person was so low as not to become an object of his humanity. Whilst he was lying on the field mangled with wounds, a bottle of water was brought him to relieve his thirst; but observing a soldier near him in a like miserable condition, he said, this man's necessity is greater than mine · and resigned to him the bottle of water.

FRIDAY, 22ND NOVEMBER, 10 A.M. TO 1 P.M.

PERSIAN: TEXT-BOOKS AND GRAMMAR.

I. 1. Name the ancient dialects out of which the modern Persian has grown. Is there any, and if so, what difference between the language of Nizámi or of 'Umr Khayyám, and the colloquial Persian of the present day?

2. "'Umr is looked upon as a Súfi by some, as a mere Epicurean by others." Justify these opposite views. What do 'Umr's writings prove as to his quality as a Philosopher? Make a list of Nizámi's poetical works.

II. Paraphrase:—

(۱) دران نرگسین حرف کان باغ داشت
مگر چشم او کحل ما زاغ داشت

(۲) با توکل دست در یک کاسه دارم روز و شب
نیست بر خوان کسے چشمم چو کعب لنگري

(۳)
چو خطش قلم راند بر آفتاب
یکی جدول انگیخت از مشک ناب
فلک زان خط جدول انگیخته
سواد حبش را فرو ریخته

(۴)
در نرد محبت همه جا حصل حکست
صد مهرهٔ داغ هر طرف تیز نکست
از نقش زیاده داو نتوان بردن
نقشی کم توان برد بآن نقش یکست

(۵)
از بس غلط است حرف قاموس فلک
گشته چو خط پریرخان قابل حک
در هر ورقش اگر نه بیني صد فصل
سطري نشود یافته بي نقطهٔ شک

III. As regards the subject-matter 'Umr Khayyám's quatrains may be divided into six classes. Give a summary of the subject under each class.

IV. 1. Explain Lokhúmájis' magical system referred to in the following couplet:—

اراں پدد سي حرف شکلی کشیده
که معلوب و عالب درو ندد ددید

Quote the couplets which contain the key to this system

2 Deduce a name from —

ددں گوہ شش چیز در صرف تست
گواہ سحں نام شش حرف تست

What are the "شش چیر"?

3 What was the advice given by Aristotle to Alexander when Tutiánoosh died in the African war?

V Give 1 the various meanings of each of the following couplets —

(۱) شہی کار رو مدد معراج اوست
رمیں دوس او درۃالتاج اوست

(۲) ر تیں دعور آمدہ عار ہا
درو ددہ را رور دارار ہا

(۳) چو دو حون دد آن طشت رنگي چہ کرد
دحوردش چو آبي و آدي دحورد

(۴) چو آواز دو دیل سر کش ردی
ردي آدش ار خود دو آدس ردی

2 the literal and the esoteric explanations of —

(۱) دیا داعدان حرمي سار کں
گل آمد در داغ را دار کں

(۲) دل لالہ را کامدش حوں دحوش
درو مال حوبي دحاکي دپوش

(۳) دو رستگان چمں دار دیں
مکش حط دران حطۂ دار دیں

(۴) دسر سدزی ار عسق چون مں کسان
سلامي دہر سدرۂ مي رساں

3 the name of each ئی in —

(۱) چو رنگي دمود آن چدان دازئے
ر رومي دیا مد عدان دارئے

(۲) که در خدنز و نخت آرمائي دکں
هلاک چنیں اژدہائي دکں

VI Name and explain the صنائع لفظي و معنوی in —

(۱) کسے کو درد نرترو خسک رنج * رماهي درم دادد ارگاو گنج (۲) ندام جهان هستي ار وام او * ندہ وام تا رستي ار دام او (۳) فرس نفکند جوش مں نیل را * رہ مں نماده کند نیل را (۴) چو در حبس در جنگ هر بد گمان * کمان دارم و نر ندارم کمان (۵) ے نعمه اگر روا بدے مي خوردن * مي در سر شیشه ها نکردي قلقل (۶) رهائي نچنگ آور ار سنگ او

VII. Write down 1 the English equivalents for the underlined words —

ار تصور نطقش ار باب منطق را در هرباب تصدیقی حاصل نشده که ار روے حجت معروش نباشد *

2. the Persian equivalents for .—

هفت نرکار - جزء لایتفک - شکر آب - شیرسیاه - غول سیاه - مهره ار تف افگندن - باب رن - پردهٔ دیر سال - ارران حود کداب خوردن - تیغ کوه - نفس سوحته - هندوي چرخ - طرفدار نسحم - سشم حانه - نخ - عور *

3. the derivation of —

دا کبزه - دلعار - دلقوس - سکاهں - شب آهنگ - کدنور - خانقه - مورپان *

VIII 1. Explain the underlined words —

(۱) نرآرم چراغي رنروانهٔ * درخني نرآرم ریک دانهٔ (۲) گزارندهٔ دیکرا ں نوند * گزارش چندں کرد نا نقشبند (۳) نه نقشے که سر و کلاه ن است حود (۴) سه نوبت رن و نه نوبت نوار

2. Distinguish between :—

جواد - جوّاد ; کرامت - استدراج ; تاج - خراج ;
رستخیز - رُستخیز *

3. Write short notes in Persian on :—

سیاوُش - بلنگر - طوطیا نوش - زراچه - کاوُش - رهره
و ہاروت و ماروت *

IX Point out 1 the resemblance between خورشید and جلوهٔ عروس in :—

بجلوه بر آورد خورشید دست * عروسانه بر کرسیٔ زر نشست

2. the ردیف and قافیه in :—

(۱) ای شاہ جہان بر آسمان داري تخت
سست است عدو نا تو کمان داري سخت

(۲) من درغم هجر و دل بدیدار تو خوش
نن درغم هجر و دل بدیدار تو خوش

(۳) حبابي را چو خواند نقطهٔ وصل
دهد توضیح باب موج صد وصل

3. the nominative of فشرد in (۱) and the مراعات النظر in (ب)

(۱) ز بویه که بي بر زمین مي فشرد
در اندام گاو استخوان گشت خرد

(ب) که آن اژدہا خوي مردم خصال
نہنگے است کاورد بر ما زوال

4 the different kinds of اضافت in :—

ساکن شہر - گوش هوش - دف ماه - خون خوردن
طوطیا نوش - عیص إسحاق *

مبادا که شه را رسد بابي لغز * که گردد سر ملک شور بده معز

X 1. What is the literal meaning of the word مصراع ? What do you call the first and the last foot of each hemistich of a couplet ? What is the chief difference between a قطعه and a قصیده ? Enumerate the principal metres of مثنوی *

2. Give examples of any *three* of the following (*a*) عیوب قافیه and (*b*) عیوب کلام :—

(*a*) غلو - اختلاف قید - اشباع - اختلاف حذو - ایطاء - تضمین

(*b*) غرابت - ضعف التالیف - تبایع - حشو قبیح - سکتہ قبیح - سلخ

3. How are abstract nouns formed in Persian (*a*) from simple or compound adjectives; (*b*) from appellative nouns.

FRIDAY, 22ND NOVEMBER, 2 TO 5 P.M.

PERSIAN: TRANSLATION.

I. Translate into Persian :—

1. Of the provinces which had been subject to the house of Tamerlane, the wealthiest was Bengal. No part of India possessed such natural advantages both for agriculture or for commerce. The Ganges rushing through a hundred channels to the sea, has formed a vast plain of rich mould, which even under the tropical sky, rivals the verdure of an English April. The ricefields yield an increase such as is elsewhere unknown. Spices, sugar, vegetable oils, are produced with marvellous exuberance. The rivers afford an inexhaustible supply of fish. The desolate islands along the sea-coast, overgrown by noxious vegetation, and swarming with deer and tigers, supply the cultivated districts with abundance of salt. The great stream that fertilises the soil, is at the same time the chief highway of commerce. On its banks and those of its tributary waters, are the wealthiest marts, the most splendid capitals, and the most sacred shrines of India. The tyranny of man had for ages struggled in vain against the overflowing bounties of nature. In spite of the Muslim despot and of the Mahratta freebooter, Bengal was known through the East as the garden of Eden, as the rich kingdom.

2. That which we earn by labour and merit gives us greater pleasure than that which we inherit or receive as a gift. The fruits of labour are full of good hope; being the produce of personal toil, they are an earnest of future success. But the gifts of fortune bring no assurance with them of subsequent favours, and their recurrence can never be relied on.

II. Translate into English :—

1. گزارش کن رازهای نهفت
زتاریخ دهقان چنین باز گفت
که چون شاه چین زین برابرش نهاد
فلک نعل زنگی بر آتش نهاد
سپهر از کمین مهره بیرون جهاند
ستاره زکف مهره بیرون نشاند

جهان از دلیران لشکر شکن
کشیده چو انجم سے انجمن
از آینهٔ بیل و زنگ شتر
صدف را شبه رسته برجای در
ز بویه که بي بر زمین مي فشرد
در اندام گاو اُستخوان گشت خرد
شه روم رسم کیان تازه کرد
ز نوبت جهان را پر آوازه کرد
بر آراست لشکر بر آئین روم
چو آرایش نقش بر مهر موم.
ز رومي ننی بود بس مهربان
زبان آوري آگه از هر زبان
کشیده دمش طوطیان را بدام
سخن پروري طوطیانوش نام
بشیرین سخنهای مردم فریب
ربوده بیوشندگان را شکیب
سکندر بحکم پیام آوري
بر خویش خواندش بنام آوري
بفرمود تا هیچ نارد درنگ
شتابان شود سوی سالار زنگ
رساند بد بیم شمشیر شاه
مگر بشنود باز گردد براه

2 از رطوبت سایهٔ درختانش ماهي زمین در اندار شناوري - و از رغبت زر گلهای الوانش قارون بوته سار کیمیا گري - شمشاد باندازپرواز مرغان نگاه کمند طره بدست انداز داده - وسرو بشمارهٔ صید دلهای آگاه چین از دام گیسو کشاده - ابرها در راه هوا داري این گلشن شب و روز بهم چشمي هم در قطره زدن - نیلوفر به نشاط سر از زمین بر آوردن در

انداز کلاه بر آسمان انداختن - کدامیکه ایشانش از بیوت تصنیف شطرنج زیاده بود تصنیف کرده بدین امید که شاید منصوبهٔ رخ نماید و از بیل مات فلک زد گي بر آید بشاه عرصهٔ هند گزرانید وزیر بارا است فرزینهاد خواست که از دخلهاي کج اسپ خواري بر سر این پیادهٔ بساط عزت تازد *

3 یک نان بدو روز گر شود حاصل مرد
وز کوزهٔ شکسته دمي آبي سرد
مامور کسي دگر چرا باید بود
یا خدمت چون خودي چرا باید کرد
مي خور رنو کدورت و فلت نه برد
و اندیشهٔ هفتاد و دو ملت نه برد
پرهیز مکن ز کیمیائي که ازو
یک جرعه خوري هزار علت نه برد

4 (۱) یک بارهٔ حرفها دارم بگویمش (۲) این همیشه میانهٔ نوکران را بهم میزند (۳) ساخلوي اینجا امروز سان مي بیند (۴) آن اسپ همیشه سر تاخت مي دود واین خوب پورطمه مي رود (۵) کف پاے او باد کرده است (۶) دماغ ندارم (۷) دو برمهٔ علف خشک بیار (۸) من نمي دانم که گمرک مال من چه قدر میشود *

5 ما یان که سعد الله ولد وجیه الدین و گل خان بن کبیر خان ساکن قصبهٔ ویلور ایم - چون مقدمهٔ ما مقران ثابت قرض در بدش است وانفصال نمي یابد نحوی که شیخ امدوا لله که حکم و منصف طرفین اند بتصفیه رسانند بهر صورت مارا قبولست - ار مرضئ تجویز مشار الیه سرمو تجاوز و سرتابي نمیان نخواهد آمد - بدایران این چند کلمه بصورت حکمنامه نوشته داده شد که ذاتي الحال سند باشد - تحریر في التاریخ غرهٔ شهر ربیع الثاني سنه ۱۳۰۷ هجري

FRIDAY, 22ND NOVEMBER, 10 A.M. TO 1 P M.

URDU: TEXT-BOOKS AND GRAMMAR.

I اِن ابیات کي شرح کیجئے :—

(۱) کیون جو فروش کرتے تھے گندم نمائیان
خود شوق نہا جناب کو نان شعیر کا

(۲) شفق سمجھا ہے اسکو ایک عالم واے بیدردي
فلک کو گرینگولا جالگا خاک شہیدان کا

(۳) روی جانان کا تصور مین جو نظارا ہوا
دلمین تھا جو داغ حسرت عرش کا نارا ہوا

(۴) بزم میں فانوس کیا آئینۂ تصویر ہے
شعلہ ہے تصویر فندیل شمع ہے تصویر نا

(۵) جہانمیں جیتے تھے شیریں ادا ہوے حوریز
یقین ہے بیزے ہون اب جاے بیسکر بیدا

(۶) نو وہ ہے نرکالۂ آتش جو گذرے داغ مین
نو نو رخ سے چراغ گل جلائے عندلیب

(۷) شفق مین ماہ نو کو دیکھکر حسرت یہہ آتي ہے
لہو میرا نہین لگتا کسیکی نعل توسن پر

(۸) گرے تھے ایکدن دو چار آنسو چشم جانان سے
بجاے سبزہ نرگس بہولتي ہے میرے مدفن پر

II 1 متقدمین اور متاخرین کي سخنگوئي مین کیا فرق ہے ؟

2 کتاب اخلاق جلالي کسکے حکم سے ترجمہ کئی گئي اور اسکے مترجم کا نام کیا ہے ؟

3 حکمت عملي اور نظري کسکو کہتے ہین اور انکے انواع کیا ہیں ؟

4 نفس انساني و نفس حیواني اور نفس نباتي کي تشریح کرو اور ہر ایک کے خاص خاص قواء بتلاو ؟

5 رتجرد نفس کي دلیلین لکھئے *

III 1 اسباب غضب کے کتنے ہین اور کونسے ؟ دفعہ غضب کا کسطرح ہے ؟

2 افلاطون نے دشمنون کے دفع کرنے کا کونسا طریقہ مستحسن جانا ؟
3 کسلئے ایک هي شخص کو متعدد پیشون مین مشغول نکیا چاهئے ؟
4 تمدن کے کتنی اقسام هین اور کونسے ؟

IV. سوالات مرقوم الذیل کے جوابات لکھئے :—

(۱) اشتهار جو جامع مسجد دهلي مین محاربهٔ عظیم کے پیشتر آویزان کیا گیا تها کس باب مین تها ؟
(۲) سمسن فریزر کیسا هلاک هوے ؟
(۳) جنرل نیل - نرهامپور - گروه ملیشا کي کیفیت بکمال اختصار تحریر کرو ؟
(۴) کونسي تدبیر مقابلهٔ مفاسدین مفاد هوپور عمل مین آئي ؟
(۵) بریلي کے سپاهیون کي دغابازي کي دلیل کیا هے ؟

V. 1 الفاظ ذیل کے معنے انگریزي مین رقم کیجئے :—

کسوف و خسوف - محاق غم - زمان نقاطع - تدقیقات عملي - مغلق - اعلیٰ علیین - مَلَکہ - خوارق - دراعہ - مبادي عالیہ - قوانین طبعي - نسبت تالیفي *

2 اِنکي تعریف مطابق جامع الاخلاق کیجئے :—

نجدت - تواضع - حلم - حسن تعقل - توکل - صلهٔ رحم - عدالت - کبر *

VI. بتلاؤ که اسماے ذیل مین مذکر - مونث اور مختلف فیه کونسے هین :—(۱) کائنات - عنایات - تسلیمات - لغت - گیهون - طوح - طرف - خاطر - معرفت - شیرینج - سالگره - مهمان - پیکدان - املا - مالا - نشو و نما - نقاب - صفات - روایات - حکایات * (۲) اسماے سنارگان * (۳) اسماے حروف تهجي *

VII. 1 هر ایک کي تعریف معه امثال لکھئے :—

استعارهٔ تخئیلیه - ذوالقافیتین - معما - قافیهٔ شائگان - اقتباس - قطعه * 2 یه اسما کن سے استعاره کئے جاتے هین :—
بادام - پسته - فندق - نرگس - شمشاد - هلال - غنچه - مشک *

3 مرقوم الذیل ماخذ سے اسماے صفت بناو:—
شکر - حلم - عزت - جبن - جود * 4 جمع مکسر لکھو:—
نعمت - علم - عَلم - اَلم - حُکم - حکمت - شعاع - دار *

VIII. 1 ک - ن - و - اوري - کسي لفظ سے ملحق هون تو کیا معنی دیتے هین ? 2 هر ایک حرف مزبور کے اعداد ازروے حساب جمل کے کیا هین *

FRIDAY, 22ND NOVEMBER, 2 TO 4 P.M.

URDU: TRANSLATION.

I. Translate into Urdu :—

1. The most obvious part of the value of scientific instruction, the mere information that it gives, speaks for itself. We are born into a world which we have not made; a world whose phenomena take place according to fixed laws, of which we do not bring any knowledge into the world with us. In such a world we are appointed to live, and in it all our work is to be done. Our whole working power depends on knowing the laws of the world—in other words, the properties of the things which we have to work with, and to work among, and to work upon. We may and do rely, for the greater part of this knowledge, on the few who in each department make its acquisition their main business in life. But unless an elementary knowledge of scientific truths is diffused among the public, they never know what is certain and what is not, or who are entitled to speak with authority and who are not: and they either have no faith at all in the testimony of science, or are the ready dupes of impostors.

2. In every society may be heard reprobation of those who too early stimulate the minds of their little ones. And the dread of this early stimulation is great in proportion as there is adequate knowledge of the effects; witness the implied opinion of one of our most distinguished professors of physiology, who told us that he did not intend his little boy to learn any lessons until he was eight years old. But while to all it is a familiar truth that forced development of intelligence in childhood entails either physical feebleness, or ultimate stupidity, or early death; it appears not to be perceived that throughout youth the same truth holds. Yet it unquestionably does so. There is a given order in which, and a given rate at which, the faculties unfold. If the course of education conforms itself to that order and rate, well.

3. Let the sword give way to the gown.

4. Why does any man seem to be that which he is not?

II. Translate into English :—

1 اچھي خصلتون کي تعداد مین حکمت طبعي کي بحثون

سے علم نفس کي بحث مين مقرر هوا ہے کہ نفس ناطقۂ انساني مين دو قوتين هين - ايک قوت ادراکي جسکے سبب هر ايک شي کو جان سکے - دوسري قوت تحريکي جسکے سبب سے هر ايک طرح کا کاروبار کرسکے - پر قوت ادراکي کے دو شعبے هين - پہلا عقل نظري وہ سبب ہے صور علميہ کے قبول کرنے کا مجردات سے - دوسرا عقل عملي جسکے سبب هر ايک آدمي اپنے بدن کو کاروبار مين مشغول کرتا ہے - پر يہہ شعبہ يعني عقل عملي باعتبار علاقہ رکھنے اُسکے قوت غضبي اور قوت شهوي کے ساتھہ سبب هوتا ہے فعل کا جيسے مار کھانا - پيٹنا - يا قبول فعل کا جيسے شرمندگي - هنسي - رونا *

2 اس شعلہ روسے عشق ہے چشم پر آب کو
بجلي سے رابطہ هو نہ کيونکر سحاب کو
کرتے تھے فاش نشے مين بدمست سرغيب
اسواسطے حرام کيا ہے شراب کو
جز داغ عشق چارۂ تر دامني نهين
کرتي ہے خشک گرمئ خورشيد آب کو
صدمے اُٹھانے والے هين روز فراق کے
کيا لائين هم شمار مين روز حساب کو
کي ہے بهاں شدت سے شدت برشکال اشک نے
کيون نہ وهان آجائے موسم سبزے کے آغاز کا
داغ فرقت زيست بےسوز جهنم بعد مرگ
ان بتون کو کس توقع پر خدايا چاهئے
سوال وصل مين هلنا پريرو تيرے ابرو کا
اشارہ ہے برات عاشقان بر شاخ آهو کا

3 بيان ذيل جو در باب حرکات عہ رجمت و ديگر رجمتهاے مقيم دهلي کے ہے هم نے اس کتاب سے جسکا نام حالات مفسدۂ دهلي ہے اور جو ميرٹھہ مين بغير نام مولف کے چھپي ہے استنباط کيا ہے - جب خبر آمد مفسدان و حال قتل چند انگريزان و

مسماري محصول خانه مين بحر و سوختگي چند عمارت كي چهاوني
مين پهونچي تمام فوج كو حكم طياري كا هوا - ٤٥ رجمنٹ
پياده كان هندوستاني جو قريب تو حكام شهر كے تهے اول طيار هوئي
جسمين كے چهي كمپنيان زير حكم كرنل ريلي صاحب كشميري
دروازے پر واسطے روكنے مفسدين كے گئين - اور دو كمپنيان
زير حكم ميجر پترسن صاحب توپون كے ساتهه جانے كے واسطے
كهڑے رهين - كرنل ريلي صاحب بباعث نا واقفيت اصل ماهيت
فساد كے اور تصور كرے كه فساد صرف بازاريون كا هے اپني سپاه
كو خالي بندوقون كے ساتهه لينگے *

4 مين جو كهتا هون كه هم لينگے قيامت مين تمهين
كس رعونت سے وه كهتے هين كه هم حور نهين
ظلم كر ظلم اگر لطف دريغ آتا هو
تو تغافل مين كسي طرح سے معذور نهين
دل كو نياز حسرت ديدار كوچكے
ديكها تو هم مين طاقت ديدار بهي نهين
شوريدگي كے هاتهه سے سر هے وبال دوش
صحرا مين اے خدا كوئي ديدار بهي نهين
اس سادگي پہ كون نه مرجاے اے خدا
لڑتے هين اور هاتهه مين تلوار بهي نهين

FRIDAY, 22ND NOVEMBER, 10 A.M. TO 1 P.M.

TAMIL: TEXT-BOOKS AND GRAMMAR.

I. சிந்தாமணியைச் செய்தவருடைய சரித்திரத்தைச் சுருக்கிப் பன்னிரண்டு வரியிலெழுதுக. அதை யனுசரித்து எந்தச் சைவநூல் செய்யப்பட்டது?

II. அடியில்வருஞ் செய்யுள்களில் முதலாவதற்குப் பதவுரையும் மற்றவைகளுக்குப் பொழிப்புரையும் எழுதுக:—

1 மானத்துவண்டலுழவோரொழுத்தின் வடிவுற்றசீர், மானத்துவண்ட வினையாளராயினு மால்வளர்வி, மானத்

துவண்டலமாமரங்கம்யழி யாவரினும், மானத்துவண்டமர் தாரண்டராம்பதம் வாய்க்குமங்கே.

2. தெள்விளிச் சிறியாழ்ப்பாணர் தேம்பிழி நறவமாந்தி, வள்விசி கருவிபம்ப வயின்வயின் வழங்குபாடல், வெள்ளிவெண் மாடத்தும்பர் வெயில்விரி பசும்பொற்பள்ளி, யெள்ளருங் கருங்கட்டோகை யின்றுயி லெழுப்புமன்றே.

3. குழற்சிகைக் கோதைசூட்டிக் கொண்டவ னிருப்ப மற்றோர், நிழற்றிகழ் வேலினானை நேடிய நெடுங்கணாளும், பிழைப்பிலாட் புறந்தந்தானுங் குரவனைப்பேணல்செய்யா, திழைக்கினாரிவர்கள்கண்டா யிடும்பைநோய்க்கிரைகளாவார்.

III. (1.) தூம்புடை நெடுங்கைவேழந் துற்றிய வெள்ளி லேபோல். (2.) காதிவேன் மன்னர்தங்கள் கண்ணென வைக்கப்பட்ட, நீதிமேற் சேறறேற்றாய். (3.) வண்டுமொய்த்தரற்றும் பிண்டி வாமனால் வடித்த நுண்ணூல், உண்டு வவத்தனைய நீயும். (4.) கோளியங் குழுவையன்ன கொடுஞ்சிலையுழவன். (5) விரைசெறிகமலமென்பொகுட்டுமேவியவரசரோருகன்.

6. நடையினின்றுயர் நாயகன்றோற்றத்தி
னிடைநிகழ்ந்த விராமாவதாரபபேர்த்
தொடைநிரமபியதோ மறுமாக்கதை.

7. ... ... சங்கம்
இடவமலைக்கும் புனலரங்காவெய்த்த மார்க்கண்டன்கண்ட,இடவமலைக்குமுலகழியாதுள்ளிருந்ததென்னே.

8. தேன்மிடைந்ததாரினான் செங்களஞ்சிறந்ததே. 9. விண்ணிட மள்ளர்கொள்ள மினறக்கொளி திருத்தினானே. 10. யாவராயினு நால்வரைப் பினனிடில், தேவரொன்பது தேறுமிவ்வையகம்.

(a) இவற்றிற்குப் பொருள் கூறுக.

(b) 1-இல் வேழந்துற்றிய என்பதற்கு நச்சினார்க்கினியர் கூறும் பொருள் யாது? அப்பொருளை யேற்றுககொண்டால் தூம்புடை நெடுங்கையென்னு மடைமொழிக்குப் பிரயோசன முண்டா? 2-இல் காதி என்பதின் பொருளை விரித்துக்கூறுக. 5-இல் வரசரோருகன் என்பதற்கு வந்த அடைமொழிக்குப் பிரயோசன முண்டா இல்லையா? நியாயத்தோடுகூறுக. 6-இல் நாயகன்றோற்ற மெவை? அவற்றில் நாயகன்செய்த முக்கியமான காரியங்கள் எவை? 8-இல் சிறந்ததென்று சொன்னதற்குக் காரணம் என்ன? 3, 10 குறிப்பிட்டவை யார்க்கு யார் உரைத்தவை?

IV. ஏகம் முதற்கல்வி முளைத்தெழுந் தெண்ணில்கேள்வி
யாகம்முரட்டிண் பணைபோக்கி யருந்தவத்தின்
சாகந்தழைத்தன்பரும்பித் தருமம்மலர்ந்து
போகங்கனி யொன்று பழுத்தது போலுமன்றே.

1. இதிலுள்ளபொருளணியாது? உபமானோபமேயங்களைப் பிரித்துக்கூறுக.

வைதவைவின் மராமர மேழ்துளை
யெய்த வெய்தவற் கெய்திய மாக்கதை
செய்த செய்தவன்.

2. இதிலுள்ள சொல்லணி பொருளணிகளையும் குறிக்கப்பட்ட கதைகளையும் விவரமா யெழுதுக.

V. 1. வினையெச்ச வாய்பாடுகளை வகுத்துணர்த்துஞ் சூத்திரத்தை யெழுதி அச்சூத்திரத்திலோதாத நான்கு வினையெச்ச வாய்பாடுகளைக் கூறுக.

2. செய்பு என்னும் வாய்பாட்டு வினையெச்சம் சூத்திரத்திற் சொன்ன காலத்தன்றி வேறுகாலத்தில் வருவதற்கு இராமாயணத்தினின்று ஒருதாரணந்தருக.

VI. 1. வேற்றுமை மயக்கத்திற்குச் சூத்திரமெழுதி யிரண்டுதாரணங் கூறுக.

2. வாம்புரவி வழுதி. பொன்னுசலாடாமோ, அடியிற் கோடிட்டவைகளுக்கு இலக்கணவிதி கூறுக.

3. உரையிற்கோடல், இரட்டுறமொழிதல், ஏற்புழிக்கோடல் இவைகளுக்குப் பொருளெழுதுக.

VII. 1. துற்ற, தடாயின என்னும் எச்சங்களுக்கும் வம், நோனான், என்றி, என்னும் முற்றுக்களுக்கும் பகுபத வுறுப்புக்கள் கூறுக.

2. பையப்பைய, வயின் வயின், மீமிசை இவ்வடுக்குகளுக்குப் பொருள் என்ன?

VIII. பல்லாண்டு, நம்பன் மாதுலன், கந்து நாமன், மதர்வை, ஆவணம், நாவி, ஓசனை, நெறிமை, ஆமான், இஞ்சி, ஆனியம், மசரதம், திருவிலி, கொள்கொம்பு, பிரப்பு, சேதா, இப்பதங்களுக்குப் பொருள் கூறுக.

IX. (1.) தெய்வத்தா லாகாதெனினு முயற்சிதன் மெய்வருத்தக்கூலிதரும். இங்கு உம்மைக்குப் பொருளென்ன? (2.) இன்பம் விழையான் வினைவிழைவான் றன்கேளிர் துன்பந் துடைத்துன்றுந் துணை. இதற்குப்பரிமேலழகர் உரை யெழுதுக. (3.) அமைச்சனுக்கிருக்கவேண்டிய குணங்களில் நான்குகூறுக. (4.) அறிகொன்றறியான் என்னுங் குறளை யெழுதிப் பொருள் சொல்லுக. (5.) நாவிற்பிறக்கும் நன்மையுந்தீமையும் இக்கருத்தமைந்த செய்யுளைக் குறளினின்று எழுதுக.

X. அடியளந்தான், ஆள்வினையுடைமை, வேளாண்மை, உப்பக்கம், அசாவாமை, மாமுகடி, இவற்றிற்குப் பொருள் எழுதுக.

FRIDAY, 22ND NOVEMBER, 2 TO 4 P.M.

TAMIL: TRANSLATION.

I. Translate into Tamil:—[See Urdu Translation Paper, page clv.]

II. Translate into English the following stanzas:—

1. விளிம்புதெற்றி முற்றுவித்து வெள்ளிகட்டி யுள்ளுறப், பளிங்குபொற் றலத்தகட் டடுத்துறப் படுத்தலில், தளிந்தகற் றலத்தொடச் சலத்தினைத் தனித்துறத், தெளிந்துணர்த்துகிற்றுமென்ற றேவராலு மாவதே.

2. சீற்றமிக்க மன்னவன் சேர்ந்த சூஞ்சரந்துதற், கூற்றருங் குருதிவாள் கோடுறவமுத்தலி, னூற்றுடை நெடுவரை யுருமுடன்றிடித்தென, மாற்றரும் மதக்களிறு மத்தகம் பிளந்தவே.

3. இடும்பைக்கிடும்பை படுப்பரிடும்பைக்
கிடும்பை படாஅ தவர்.

4. தெரிதலுந் தேர்ந்து செயலுமொருதலையாச்
சொல்லலும் வல்ல தமைச்சு.

5. தலையிலங்காபுரஞ் செற்றுனரங்கனென் றுழ்சொற்புன்கு, தலையிலங்காதரஞ் செய்தபிரான் சரணன்றி மற்றோர், தலையிலங்காநின்ற கண்ணிலங்காண்கைக்குத் தாழுகைக்குத், தலையிலங்காதிலங் கேட்கைக்கு வாயிலஞ் சாற்றுகைக்கே.

III. Translate the following:—

1. மேற்கூறிய உறுப்புக்களால் உயிர்கள் செய்கின்ற தொழில் பொதுவாக இரண்டெனக் கூறப்படும்; அவற்றுள் முதலாவது 'உண்ணுதல்.' இதோ நிற்கும் மரமானது வேரால் மண்ணிலுள்ள சில பௌதிகங்களையும் இலைமுதலியவற்றால் காற்றிலுள்ள சில பௌதிகங்களையும் எல்லாப் பாகங்களாலும் ஜலத்தையும் உட்கொண்டு அந்தப் பொருள்களைத் தனக்கு வேண்டிய பாகங்களாக மாற்றித் தன்மயமாகச்செய்து வளர்ச்சியடைகின்றது. இப்படித் தன்மயப் படுத்தற்கே உண்ணல் என்று பெயர்.

2. சூரிய கிரணத்தாற் றோன்றுங் கானற்சலத்தை மெய்யான தடாக சலமெனக்கருதி நெற்பயிர் முதலிய பைங்கூழினை யுண்டாக்கும்படி எண்ணுவார் அறிவிலார்.

3. இச்செய்தி கண்டும் போகாதே கொடிய வுயிரோயிரா நின்றாய்.

4. நம்முடைய பழைய பிறப்பை யெண்ணில் கடலின் மணலும் உறையிடப்போதாது.

5. இருதலைக்கொள்ளியிடத்தெறும்புபோலிருந்தாள்.

FRIDAY, 22ND NOVEMBER, 10 A.M. TO 1 P.M.

TELUGU: TEXT-BOOKS AND GRAMMAR.

I. 1. శ్రీనాథునికవితాచరిమ వర్ణించుచో వేమభూపాలుఁడిట్లు చెప్పియున్నాఁడు. "పరిణవింతు ప్రబంధపరమేశ్వరుని తేవ సూక్తివైచిత్రి నెక్కొక్కమాటు", మీరు చదివినంతలో నియ్యిరువురికృతులయందు "సూక్తివైచిత్రి"ఁదుల్యంబులగు రెండుపద్యంబుల సూచించునది.

2. యయాతిచరిత్రకారకుఁ డేవిషయములలోఁ బ్రాచీనకవుల్ల మార్గంబు లనుసరింపండయ్యె? అనుసరింపమికిఁ గతంబేమని దోఁచెడిని? ఇక్కావ్యమునందలివర్ణనలలో నపూర్వములని దోఁచు రెంటి నుదాహరించునది.

3. జగన్నాథకవి "అరసము లశబ్దచిత్రంబు లనియతద్విరేఫవృత్తులు దుష్కవికృతకృతితతులు" అనిచెప్పి "కాఱింతువుకొమ్మలనదివారల తొల్లింటిపాపఫలమదలంపక" అని వ్రాసె ననియాక్షేపింతురు. మీయభిప్రాయమేమి?

II. 1. ఈ క్రిందిపద్యమున కచ్చతెలుఁగు పదములతో దండాన్వయము వ్రాయునది:—

చనికాంచెన్గమలావధూప్రియుఁడు భాస్వచ్ఛృంగసంత్రాసకృ
ద్ఘనమార్గస్థలరోధిపీవరతరాకారేక్షణాత్తస్వనా
కనగర్యుత్పతమానగోత్రగిరిశంకాభూరిరోషావిలా
శనిసమ్యగ్గ్రహణాతిలోలుపతురాసాహంబు గోవ్యూహముఁ.

2. "తురాసాహంబు" దీనికి రూపనిష్పత్తి యెట్లు? ఈ పదప్రయోగమువలన నిటఁ బ్రయోజనమేమి?

3. ఈ పద్య మేకావ్యవృత్తినిఁ జెప్పఁబడ్డది? ఇందేరసము గన్పట్టును? రసాంతరాశ్రిత మగునీవృత్తియందుఁ జెప్పఁబడ్డ హరివంశపద్యమొక్కటిసూచించునది. మిగిలిన వృత్తులను, తదాశ్రమయములగురసములను లిఖించునది.

III. ఈ క్రిందివానికి తాత్పర్యము స్పష్టముగ వివరించునది:—

(1.) చరమధరాధరధాతుధారాప్రవాహంబునుఁబోలె సంధ్యారాగంబు గగనచక్రంబు నాక్రమించె. (2.) పున్నాగకాండస్యందనవీరతిలకకద

శి కాగణికా సకలద్విజరాజరాజీవిరాజితగావున వనలక్ష్మి ననుకరించుతేనష్ట రివారంబుతోఁగూడ నమ్మాధవు నెదుర్కొనె. (3.) నిజాంతికభజచ్చక్రాంగశతాంగజలధినిషంగజల ధరతురంగవదనసదనజటాజూటభుజాంతరాళ భారతీసౌరధునీపారిజాతసుమదామభ్రమకరనఖరనఖరప్రకరఘృణిపూర పూరితంబులు.

IV. 1. కార్తవీర్యుఁడు నర్మదయందు జలక్రీడసేయు నెడఁ దనబాహాసహస్రముచే నానదిని నిరోధించెననియు, రావణునిఁ దగినట్లు శిక్షింపక కారాగృహ విముక్తుం జేసి విచ్చలవిడి ననిచెననియు, జమదగ్ని హోమధేనువును బలాత్కారముగఁ గొనియెననియుఁ, గొన్ని గ్రంథములఁ జెప్పబడియున్నది. — ఇక్కార్యములు దత్తాఖ్యునిచేఁ గార్తవీర్యుఁడు వడసిన వరములలో నెయ్యేవానికి విరోధములుగ నున్నయవి!

2. అశ్వినీదేవతల కాపేరుగలుగుటకు కాశీఖండమునఁ గారణమే మిగనున్నది! ఇఁక నొకకారణముగూడ చెప్పుదురు, అది యెద్ది? ఈ గ్రంథమునఁ జెప్పబడియుండు వినాభావావినాభావము క్తిద్వయస్వరూపములను దెల్పుకథలను సంగ్రహముగ వ్రాసి, కుబేర బృహస్పతి శబ్దములకందుఁ జెప్పఁబడిన వ్యుత్పత్త్యర్థముల విశదీకరించునది.

3. అధికవయస్కులగు స్త్రీలు అల్పవయస్కులగు పురుషులఁ బెండ్లియాడుట సర్వసాధారణ ధర్మముగఁ బూర్వముండె ననుటకుఁ దార్కాణముగ మీచదివిన గ్రంథములలో నుండునితిహాసముల రెంటిని, దేవయాన నత్తవారింటికనుచునపు డామెతల్లి యామెకుఁజెప్పిన పతివ్రతాధర్మములను, మిగుల సంగ్రహముగఁ దెల్పునది.

V. (1.) "కనకమ్ము దెమ్ము భూమినితంబయినవచ్చి కనకాంబరుని దెమ్ము కమ్ములనేత్త"—ఇందలి పదప్రయోగసౌష్ఠవంబును, ఇందు సూచితంబగు సంచారీభావమును విశదపర్చునది. (2.) "నాగగంధ హరుఁడెందకయున్న సతికి నేగతి మనోజాతబాధతోలఁగు" దీనికిఁగల రెండర్థములయందును నాగవాచకమునకు గజపరముగనే యర్థము సమర్థించి యిందు గర్భితమ్ముగ స్ఫురించెడు సాత్వికభావమును దెల్పునది. (3.) "కైరవనేత్ర విచారోష్ణకాతపతాపంబు చేతఁ గుందకయమున్న"—రక్షింపుమని శ్రీకృష్ణునివేడుచో, రసమంజరి ప్రయోగించిన సంబోధనవాచకమెది? దాని

సారస్యమేమి? ఇంధు సూచింతంబగు నవస్థఁదెల్పునది. (4.) "ధాతువాదులమీఁదఁ దాత్పర్యమొనరించు పీఠమర్దుల కొనరించు పెద్దఱికము"—ధాతువాదపీఠమర్దులెవరో తెలిపి, పీఠమర్దులతరగతివారిలో నిఁక మువ్వురఁ బేర్కొనునది. (5.) "మొదలతుమ్మెదదిమ్ము రొదలచేనుప్పొంగి తులకించి పూఁబొదల్దూరిదూరి"—ఇందలి శబ్దాలంకారమును, ఇఁక రెండు శబ్దాలంకారములుదాహరణ సహితముగను వ్రాయునది.

VI. (1) తద్ధర్మార్థకమన నేమి? దీనికి వర్తమానార్థకమునందును, ఆస్న్నయను శబ్దమునకు ద్విత్వలోపముగను, ప్రయోగంబులు హరివంశమునఁ జూపునది. (2.) 'తామరపాకు' ఈ ప్రయోగము మీరు చదివిన గ్రంథములలో దేనియం దేసందర్భమున నున్నయది? ఇది సాధువా? సాధకబాధకములం దెలుపునది. (3.) 'నేజము' ఈ రూపము వ్యాకరణమున నే సూత్రమునకు విరుద్ధమనఁదగును? (4.) "తొంటిజన్మముల మనము నోము నోములకలిమివలన"—ఇందు మొదటి 'నోము' నకతి దేశ మెట్లు?

VII. 1. (a) "కచగ్రహణశాపపర్యంతంబున్"—ఇది యే సందర్భమునఁ జెప్పఁబడియె? ఈ యభిప్రాయ సూచకమగు లోకోక్తి నొకటి హరివంశమున నున్న దానిం దెల్పునది. (b) "పృథివినధిపులు నూతన ప్రియులుగారె" ఈ తాత్పర్యముగల లోకోక్తి మీ చదివిన గ్రంథములలో నే సందర్భమున నేరూపమునఁ గన్పట్టుచున్నది? (c) యయాతిపతిత సుభాషితంబున "సమధికభోగంబులసమయంగామంబనుటిదిమృషావాదంబ" నియును, గ్రంథాంతరమునఁ "గామిగాక మోక్షకామిగాఁడ" నియుఁ జెప్పఁబడ్డది. ఈ రెంటికి సంబంధాసంబంధములెట్లు?

2. (a) "కృత్యపంచకమునాగింపలేఁడె యింతిప్రాపులేక కృతాంతభంజనుండు."—కృత్యపంచకమెద్ది? దాని సాగించుట ~~[illegible]~~ కృతాంతభంజనుం డెవరికొఱకు కృతాంతుని భంజించె? (b) "మహితహృల్లేఖికా మహామంత్రమున కేవరారోహ ముఖ్యాధి దైవతంబు"? దీనికుత్తరముసెప్పి, హృల్లేఖికా మహామంత్ర మనుశబ్దమునకు అర్థము దెల్పునది.

VIII. 1. ఈ క్రిందిపద్యముల నిమిడియున్న యర్థాలంకారములు పలానివని కారణములతో విపులముగఁ దెలిపి శ్రీకృష్ణుఁడు దావపావకకీలలఁ ద్రావినకథ సంగ్రహముగఁ దెల్పునది:—

(a) రమతో రత్నాకరగర్భమున జనించినను బహుళీవనుదాక్షిద్రవం బమృతకర కలిగె నీ కది కమలార్తికరుండవగుట కతనం గాదే.

(b) దావపావకకీలలఁ ద్రావునపుడుఁ దనువుగందదు లవమేనిఁదరు ణియిపుడు మతిని మీనతిపాయనికతన నతను తాపముడివో. కయుండె చిత్రంబుగాదె.

2. అనన్వయము, అర్థాపత్తి, అశక్యకరణము, పరిణామము, ప్రతీపము, వ్యతిరేకము.—వీనిలో నేమూడింటికైన లక్షణములుచెప్పి, వానికి మీపుస్తకములలోని లక్ష్యములనుగాని, వాని తాత్పర్యములఁగాని వ్రాయునది.

IX. (1.) తోటకవృత్త మెన్నవచ్ఛందములోనిది? "భవపన్నగభూషణ భద్రకృతీ" ఈ తోటకవృత్తపాదమును తోదక వృత్తపాదముగ మార్చి వ్రాయునది. (2.) రగడలెన్నివిధములు? వానిలో యయాతిచరిత్రమున నుండునదెద్ది? తల్లక్షణంబేమి? ఈ రగడలోనేవైన రెండుపద్యాలవాసి వానికిలక్షణసమన్వయముచేయునది. (3.) "రహీయరంగవేలుపురాచతా లగెల్ల" ఇందు యతివిషయికమయి మీ యభిప్రాయమేమి? (4.) "నెలఁ తుకచేతులంబడిన నేలరదంబగు వేల్పుతాల్పునర్మిలినని చేరనమ్మొగిలిరేకుల నందగువాడి గోల్లోగిఁ" పై పద్యములోని వర్ణనయందుఁగల దోషమును విశదపఱిచి, ఛందోభంగముగాకుండునట్లు దానిపరిహరించునది.

FRIDAY, 22ND NOVEMBER, 2 TO 5 P.M.

TELUGU: TRANSLATION.

I. Translate into Telugu:—[See Urdu Translation Paper, page clv.]

II. Translate into English:—

1. వినమత్కార్ముకమేఘముక్తవిశిఖోద్వేలాంబుధారావళి
నిస్సేషంబొంభోజవనీసహస్రముల విధ్వంసంబు నెందించి య
య్యనపాయుండు తదాశ్రయస్థయగునుద్యద్రాజ్యలక్ష్మి న్సుధా
శనగేహంబున శాశ్వతంబుగఁ బ్రతిష్ఠాపించెఁ బెంపేర్పడఁ.

2. వ్రేలుం గొమ్మలు నేల దారసిలిన స్వేళ్లంగ రాకుండఁగా
లోలోఁ ద్రిమ్మరు నాలిగాడ్పులు పగళ్లు వ్రేలుఁ బూఁదావుల
న్జాల స్త్రీచ్చిలిపోవఁ బట్టుకొని పజ్జన్బచ్చగండార్లలోఁ
బ్రోళుం గావలివెట్టె నాతుని యేన న్జూపట్టె లేఁదోటలఁ.

3. చిలుకహుమ్మావజీ రనుకృషీవలుఁ డంగనచిత్తవప్రము
న్లజకలంబలాంగలమున న్దళినం బొనరించి కృష్ణు ను
జ్జ్వలగుణబీజ మంటి యతిబంధురరాగరసంబు నింపఁ గో
మలసుమనోరథాంకుర మమందముగా జనియించి మించెడున్.

4. విమలవిజ్ఞానదీపంబు వెలుఁగుచుండ శాంతిధారాజలంబులజలక
మార్చిభవుని నర్పించె భావపుష్పముల భక్తి నతివిశుద్ధమనో
వృత్తి యాజ్ఞదత్తి.

5. దినరా జత్తఱి పంకజవనములఁ జరియించుకాంతివర్గము దాను
న్వనధిజలకేళి సలుపఁగఁ జనియె నన న్వారుణీదిశాతటి పొల్చెన్

6. పరులయపరాధగతులకుఁ గెరలక తను బొగడుచోటఁ గీడాడె
డుచోఁ బరితోషము రోషము నెదఁ జొరనీనితపస్వి సుమ్ము
సుకృతి ధరిత్రిన్.

FRIDAY, 22ND NOVEMBER, 10 A.M. TO 1 P.M.

KANARESE: TEXT-BOOKS AND GRAMMAR.

I. 1. రాజశేఖరవిలాస పంపరామాయణ :- ఇవుగళల్లి యావుదు ఉత్తమవాదుదెందు నిమగే తోరువుదు? యావుదన్ను ఓదిదరే కర్ణాటక భాషెయల్లి విశేష జ్ఞానవుంటాగువుదు? సకారణవాదుత్తరవన్ను బరెయిరి.

2. నయ (elegance), ఓజే, బంధగౌరవ, జాణ్ముడి, బెడంగు, బిన్నణ—ఇవుగళల్లి యావావువు నీవు ఓదిరువ గ్రంథగళల్లి యావావుదరల్లి హెచ్చాగి తోరబరువువు? కెలవు ఉదాహరణెగళన్ను సూచిసుత్త ఉత్తరవన్ను బరెయిరి.

3. వైదర్భ గౌడ పాంచాలగళెంబ మూరు నిఘంటుగళు ఉష్టే! ఇవుగళర్థవన్ను విశదపడిసి, అభినవపంప పడక్షరిగళ గ్రంథగళల్లి యావావుదు హెచ్చాగి కాణబరువుదో హేళి.

II. 1. తేరేఱ్ఱం మురియేఱ్ఱు బిల్లనుడియేఱ్ఱశ్వంగళం సూతనం
కూరంబిం కేడియిఱ్ఱుతాంగితనగం మారాంపగండంగడిం దారుత్తుం,
గేలేకాదే లక్ష్మణనుమంకండంతదంలోకసం డారంమాళ్ప కృతాం
తనంతే రఘుజుం కొండం ధనుర్దండమం ॥

ಈ ಪದ್ಯವನ್ನು ಅನ್ವಯಿಸುವುದು ಹ್ಯಾಗೆ ? ಇದರಲ್ಲಿರುವ 'ಮುರಿಯೆಚ್ಚು', 'ಉಡಿಯೆಚ್ಚು', 'ಕೆಡೆಯೆಚ್ಚು', 'ಗೆಲೆಕಾದೆ' ಎಂಬ ಪದಗಳಿಗೆ ವ್ಯಾಕರಣಾನುಗುಣವಾದ ಅರ್ಥವನ್ನು ಹೇಳುವರಾಗಿ. 'ಎಚ್ಚು', 'ಕಾದೆ', 'ಆರುತ್ತುಂ' ಎಂಬುವುಗಳ ಧಾತುರೂಪಗಳು ಯಾವುವು ?

2. ಎಸಳೆದೆಸೆ ಮಿಸುನಿವೆಟ್ಟಂ । ಪೊಸಕರ್ಣಿಕೆ ಶರಧಿಮಧು ಮಧುವ್ರತಮೆಮುಗಿಲ್ ॥ ನಿಸದವೆನೆ ಭುವನ ಭುವನಜ । ಮೆಸೆದುದು ಭೂಧವನ ಕೀರ್ತಿ ಕಮಳಾಕರದೊಳ್ ॥ ಈ ಪದ್ಯದ ತಾತ್ಪರ್ಯವೇನು ? ಇದಕ್ಕೆ ತಕ್ಕಷ್ಟು ವ್ಯಾಖ್ಯಾನವನ್ನು ಬರೆಯಿರಿ.

III. (1.) ಮೂರಿಚ್ಛೆಗಳನ್ನಾರು ಮಂಬಿಗಳಿಂದ ಮೂರು ಶಾಪವನ್ನೊಂದಿ, ನಾಲ್ವರಾಡುವ ನುಡಿಯ ಕೇಳದೆ ಅನುತಾಪದಿ ನಾಲ್ಕರೊಳಗೊಂದುಳಿದು ಮೂರ್ಗೆ ಬಯಸುತ್ತೆ. (2.) ನಾರಿಗಿ ನಚ್ಚಿನ ಕೈದು ಕೈತವಂ. (3.) ಸುಧಾಧಾಮನಂತಿನನಂತುತ್ಕಮಳಾಶ್ರಯಂ...ಸಕ್ಕಾವ್ಯದಂತೆದ್ದಿಯಂತೆ ನಿತಾಂತಂಸರಸಂ ವಿರಾಜಿಸಿದನಾ ರಾಜೇಂದ್ರಪಂಚಾ ನನಂ. (4.) ಬಿಟ್ಟಳಂ ನೃಪಸದನಂ. (5.) ಮತ್ತಿತ್ತ ರಾಮಚಂದ್ರನ ಬಲಮೆ ಚಂದ್ರಬಲವಾಗೆ. (6.) ಅನುಗುಣಸಸ್ಯದ ಸಂಪಾದನ ಸೀತೆಯೆನಿಪ್ಪ ಸೀತೆಯಂನಿನಗಿತ್ತೆಂ. (7.) ಸಮುದಾಯ ಶೋಭೆ ವರ್ಣ । ಕ್ರಮದಿಂ ಪ್ರತ್ಯೇಕ ಶೋಭೆ ಜೆಲ್ವಿಂ ನಯೆನ । ಕ್ಕಮರ್ದಂ ಮುಂದಿಡೆ. (8.) ಜನಸ್ತೋತ್ರ ಚಾಪಲ ಜಿಹ್ವಾಗ್ರ ಸಮಗ್ರ ನಾಟಕನಟಂ. ಇವುಗಳರ್ಥವನ್ನು ವಿಶದವಾಗಿ ಬರೆಯಿರಿ.

IV. (1.) ರಾಜಶೇಖರನಿಗೆ ಇನ್ನೊಂದು ಹೆಸರಿತ್ತು. ಅದು ಯಾವುದು? ಅದನ್ನು ಅವನಿಗೆ ಯಾತಕ್ಕೆ ಇಟ್ಟರು? (2.) ಖರ್ವೋತಮುಖನೆಂಬ ವಿದ್ಯಾಧರನು ಕುಂಡಲಶ್ರವನಿಗೆ ಆರು ವಿದ್ಯೆಗಳನ್ನು ಪದೇಶ ಮಾಡಿದನು. ಅವು ಯಾವುವು. (3.) ಕುಂಡಲಶ್ರವನು ತನ್ನ ತಂದೆಯನ್ನು ಜಯಿಸುವದಕ್ಕೂ, ~~ತಪಕ್ಕುಂಡ~~ ಪುಜರದೊಳಗೆ ಸೇರಿಸುವುದಕ್ಕೂ ಮಾಡಿದ ಉಪಾಯಗಳನ್ನು ಬಹುಸಂಕ್ಷೇಪವಾಗಿ ವಿವರಿಸಿ. (4.) ವಜ್ರಾವರ್ತ ಸಾಗರಾವರ್ತಗಳನ್ನು ಕಂಡು ಭಯಗೊಂಡುಸ್ವಯಂವರ ಮಂಟಪದಲ್ಲಿ ಅರಸುಮಕ್ಕಳು ಏನೇನನ್ನು ಆಡಿಕೊಳ್ಳುತ್ತಿದ್ದರು ? ಚೆನ್ನಾಗಿ ವಿವರಿಸಿ.

V. 1. ಕೆಳಗಣ ಪದ್ಯದಲ್ಲಿ ಬಿಟ್ಟಿರುವ ಅಕ್ಷರಗಳನ್ನು ವೃತ್ತ ಕೆಡದಂತೆಯೂ ಅರ್ಥ ಸಮಂಜಸವಾಗುವಂತೆಯೂ ಸೇರಿಸಬೇಕು:—ರಾಮಚಂದ್ರಂ ಮಃ ಪಡೆದಂ ಶಾಶ್ವತಲಕ್ಷ್ಮಿಯಂ.....ಪಾಲಿಸ ।

ಲ್ಪಡೆದಂ ಪನ್ನಗರಾಜ ದಿವ್ಯಧನುವಂ.....ಪಾಲಿಸ ॥
ಲ್ಪಡೆದಂ.....ನದಿರ್ಪಲ್ಮೂರ್ತಿಯಂ ಕೀರ್ತಿಯಂ ।
ಪಡೆದಂ ಕೀಳ್ಪಡಿಸಲ್.....ಸಾಹಿತ್ಯ ವಿದ್ಯಾಧರಂ ॥

2. 'ಪಾರದ ತುಂಬಿ' 'ಕರೆಯೆನೊಂದಿರದಿಂದು' 'ಇಂದುದರ್ಕನಕ್ಕಾರಡಿಗೊಳ್ಳದಂಬುರುಹಂ' 'ಜಿರಿಸಾಗದರನ್ನಂ' 'ಬಲಿಯದೊಪ್ಪುವ ಕೋಕನವಪ್ರವಾಳಂ' - ಇವುಗಳನ್ನು ಷಡಕ್ಷರಿ ಸ್ತ್ರೀವರ್ಣನೆಯಲ್ಲಿ ಪ್ರಯೋಗಿಸಿದ್ದಾನೆ. ಇವುಗಳಿಂದ ನಾವು ತಿಳಿಯ ಬೇಕಾದುವು ಏನು ?

3. ಮನಸಿಜನೆನೆ ರತಿಯೆನೆ ಕ । ಬ್ಬನ ಬಿಲ್ಲೆನೆ ಕುಸುಮಬಾಣ ಮೆನೆ ಕೋಕಿಲನಿ । ಸ್ವನಮೆನೆ ಮಧುಕರರೊಂಕೃತ । ಮೆನೆ ನೀತೆಯ ಪಸದನಕ್ಕೆ ಪರ್ಯಾಯಂಗಳ್ ॥ ಯಾವ ಪಸದನಂಗಳ್ಗೆ ಇವು ಪರ್ಯಾಯನಾಮಗಳು ? ಆರರಲ್ಲಿಮೂರಕ್ಕೆ ಅರ್ಥಮಾಡಿದರೆಸಾಕು.

4. ಪಂಪನರೀತ್ಯಾ "ರಾಜನಾಮಧಾರಕನು" ಯಾರು ?

VI. 1. 'ಬದ್ದವಣಂ', 'ಕನ್ಯಕಾವಿದ್ದಮಂ', 'ಕಾರತಂದಲ್ವೋಲ್', 'ಲವಘುಟಿತಂ', 'ಇರ್ಮೆಭರಂ ಗೆದ್ದೆನೆ ಗೊಲೆನೆ', 'ಬೀಯದ ಚಾಗದ ಪೇರ್ಮೆ',—ಇವುಗಳರ್ಥವೇನು ?

2. (a) ಈಕ್ಷಣಾಂಶು ಮಂಡಳಿಸಿದುವಿಂದುರಶ್ಮಿಯೊಳೆ ತಿರ್ಚಿ ತೊಡರ್ಚಿದ ಕೀಳನೇಣವೋಲ್. (b) ತ್ವರಿತದಿನೆದ್ದಿಯಿಬಂದು ಪುರಮಂ ರಥನೂಪುರ ಚಕ್ರವಾಳಮಂ ॥ ಪುರವನ ವೀಥಿಯೊಳ್ನಡೆಯೆ ವಾಜಿ ...

ಈ ವಾಕ್ಯಗಳಲ್ಲಿ ಕಾಣಿಸಿರುವ ವ್ಯಾಕರಣಕ್ಕೆ ಸಂಬಂಧಪಟ್ಟ ವಿಶೇಷ ವಿಷಯಗಳನ್ನು ತಿಳಿಸಿ.

3. 'ನೀರ್ವಾವು', 'ಬಲವಳಿಯೆ', 'ಬರೆವರೆ', 'ಕೆಡಿಕೆಡಿವೋಗಿ'—ಈಮಾತುಗಳಲ್ಲಿ ವಕಾರ ಬರುವುದಕ್ಕೆ ಕಾರಣವೇನು ?

4. "ಶೋಕಲುಂಟಾಕನಿದಾಘುಲಾಪಶರವರ್ಷಣ ~~ಶೋಕಪಾ~~ ಇದರರ್ಥವೇನು ? ಮತ್ತು ಇದು ಯಾವ ಸಮಾಸ ?

5. "ತಕ್ಕುದಲ್ತು ತತ್ತಂಗೆ ತಗದ ಹರ್ಷವಿಷಾದಂ". ಇದರರ್ಥವೇನು ? "ತಗದ" ಎಂಬುದು ಯಾವ ರೂಪ ? ಇದರ ಧಾತು ಯಾವುದು ?

VII. 1. ಕೆಳಗಣ ಪದ್ಯ ವಾಕ್ಯಗಳಲ್ಲಿರುವ ಅಲಂಕಾರಗಳನ್ನು ಲಕ್ಷಣ ಸಮನ್ವಯದೊಡನೆ ಹೇಳಿ :— (a) ತನುಗಳವಟ್ಟರೂಪು ಘನರೂಪ ನಲಂಕರಿಪಚ್ಚಿದವ್ವನಂ । ಮನಕೆಸೆದಾದ ಧ್ವನಕೆ ತಕ್ಕವಿಳಾಸತೆ ಸದ್ವಿಳಾ

ಸಮಂ॥ ಘನವೆನೆ ಮಾಳ್ಪ ಜಾಣ್ಮೆ ಪೊಸಜಾಣ್ಮೆಯೆನುರ್ವಿಪಸದ್ಗುಣಂ ನೃಪಾಂ । ಗನೆಗೆಸೆದತ್ತುಸದ್ಗುಣಮನೇಳ್ಗೆಯೊಳೊಂದಿಪ ಶೈವಸಂಪದಂ ॥ (b) ಮತ್ತಮಾನರೇಂದ್ರಂ ವೀತಿಹೋತ್ರನಂತೆ ವಿತತಕಾಂತಾರತಮೋಹನುಂ, (c) ಪ್ರಬಳತೇಜಸ್ವಿಯಾಗಿಯುಮಂಧಕಾರಾತಿ ರುಚಿಯುಮೆನಿಸಿರ್ದನಾ ನರೇಂದ್ರಂ. (d) ಜಾಣ್ಮೆಗೆಜವ್ವನಂ ನೆರೆದುದುಣ್ಮೆದ ಜವನ್ವಯೈದೆ ಜಾಣ್ಮೆಕಗ್ಗುಣ್ಮೆದದು.....ತದಂಗಸಂಗದಿಂ. (e) ತಳೆದುದುಮಾಂಭ್ಯಮನತಿಮಂಜುಳಗತಿಯುಂನುಡಿಯುಮಾಮ್ಯದುಸ್ಮಿತಮುಖಿಯಾ.

2. ಉಪಮಾದೋಷಗಳು ಯಾವುವು ? ಉದಾಹರಣ ಸಹಿತವಾದ ಉತ್ತರವನ್ನು ಬರೆಯಿರಿ.

3. ಎಂದು ಗುರುತು ಮಾಡಿರುವ ವೃತ್ತದ ಹೆಸರೇನು ?

VIII. "ಕಾಳಗದಿತವೆ ಮುನ್ನ ತೋಳುಗಳ ಬಲುಹನಿಂ ಖೂಳದನುಜನ ಸಪರಿದಾಳು ತನವನ್ನು ತೋರಿಕಾಲವಿದು. ಪೂರ್ವದಲ್ಲಿ ಕಾಲರಕ್ಕಸಿಯನ್ನು ಕಾಲನೊಳ ಗೈದ ಭುಜಶೀಲವೀನಾಯ್ತು ? ಅರಸ ಕಾಳದಿರು ಭೀತಿಯನ್ನು ವ್ಯಾಳೆಯಲ್ಲಿ ಧೈರ್ಯದಿಂ ವ್ಯಾಳಭೂಷಣನ ಕರವಾಲಮಂ ತುಡುಕಳುತ್ತೇಳು ಬಾಣಗಳಿಂದ ಸಾರಥಿಯನ್ನೆಸೆಯಲು ; ಮೈಥಿಲಾಪತ್ಪ್ರಭವದತಿ ತೀವ್ರರೋಷಹುತವಹನು, ಸಚಿವಾವಮತಿಯಿಂದ ವೃದ್ಧಿಯನ್ನೊಂದಿ, ಘನಧನುರ್ಭಂಗದಿಂದಂತರಾಳವ ತುಂಬಿ, ತರಳನಪಹಾಸೋಕ್ತಿಯಿಂ ಪೀರ್ಚಿತೆರಳಿದುದುದೋ ಹೊರಗೆಂಬೊಲ್ಮಹೀಶ್ವರನ ನಯನಗಳಿಂದ ರೋಷಾರ್ಚಿ ಚಿಂದುದಳ್ನೆಗಳಿದವು ; ಕಂಪಿಸಿದವಂಗಗಳ್, ಶ್ಮಶ್ರುನಿಚಯಗಳೆಲ್ಲ ನಿಗುರಿದವು"

ಇದರಲ್ಲಿ ಕಾಣಬರುವ ತಪ್ಪುಗಳನ್ನು ತಿದ್ದಿ, ಶೇಖನಾಂತರಚಿನ್ಹೆಗಳನ್ನು (marks of punctuation) ತಕ್ಕತಕ್ಕ ಸ್ಥಳಗಳಲ್ಲಿ ಪ್ರಯೋಗಿಸಿ, ಮುಖ್ಯಾಕ್ಷರಗಳಿಗೆ ಕಳುಹಿಸುವುದಕ್ಕೆ ಯೋಗ್ಯವಾಗಿರುವಂತೆ ಎಚ್ಚರದೊಡನೆ ಬರೆಯಿರಿ.

FRIDAY, 22ND NOVEMBER, 2 TO 5 P.M.

KANARESE: TRANSLATION.

I. Translate into Kanarese:—[See Urdu Translation Paper, page clv.]

II. Translate into English:—

1. ಎಳನಗೆಯುಣ್ಮೆಮುದ್ದು ಮೊಗದೋಳ್ಮರಿಯೆಂಬೆಯೆನಟ್ಟಲೆಂ

ದು ಮಂಜುಳತರವಾಗೆ ದಟ್ಟಡಿಯನಿಕ್ಕುವ, ಬಾಲಕನಂಗದೊಂದುವಾ ರ್ಪೊಳಪಿರೆ ನೀಲ ಕುಟ್ಟಿಮದೊಳುರ್ವರೆತಜ್ಜನನೀಸಪತ್ನಿತಾಂ ತಳೆದಳೊ ತತ್ಸವಾತ್ಮಭವನಂ ಪುರುಡಿಂದೆನೆಕಣ್ಗೊರಂಜೆಕುಂ॥

2 ದೇವ! ದೇವಪತಿಮುಖ್ಯದಿಶಾಧಿಪರಳ್ಕುತಿರ್ಪರೋ ರಂತೆ ಭವ ತ್ಪ್ರತಾಪವಿಭವಕ್ಕೆನೆ, ಗಣ್ಯನೆಸಿಹ್ಮಳಂ ಮಹಾ ದಂತಿಗಳಂ ಬೆಗಳ್ಗೊಳಪ ಸಿಂಹಕೆ ಲಕ್ಷ್ಯಮೆ ಪುಲ್ಮಿಗಂ? ಮಹೀ ಕಾಂತವರೇಣ್ಯ! ಮಾಳ್ಪುದೆನಗೀ ಬೆಸನಂ, ಸೆರೆಗಟ್ಟಿತಂದೆಪೇಂ॥ ಎಂದು ನುಡಿದನಾ ಮಿತವಿಭನಕುಮಾರಂ.

3. ಕೆಡಿ ಕಿರಿದಾದೊಡಂ ಸುಡದೆಕಾನನಮಂ, ತರುಣಾರ್ಕನಾ ದೊಡಂ ಕೆಡಿಸನೆ ತೀವ್ರಮಪ್ಪ ತಮಮಂ, ಹರಿಬಾಲಕನಾದೊಡಂ ಪಡ ಲ್ಪಡಿಸದೆ ಗುಂಥಸಿಂಘರ ಘಟಾವಳಿಯಂ, ಕಿರಿಗೊಸಿನೆಕ್ಕೆವೇ ಡೆಡರಿದಡಂ ಜವಂಗೆ. ಪೊಸತಿಕ್ಕನೆ ವಿಕ್ರಮಶಾಲಿ ಲಕ್ಷ್ಮಣಂ॥

4. ಈ ತೋಳೊಳಾಂತು ತೋರ್ಪೆನಿ ಳಾತಳಮಂ, ಶತ್ರುಭೂ ಪರಂ ಜಯಿಸುವೆನೆ ನ್ನೀತೋಳೊಳೆಂದು ತೋರ್ಪವೊ ಲಾತೋಳಾಡಿ ಸುವನವನಿಪಾಲಕತನಯಂ॥

5. ಇತ್ತ ಹೀರಾಮಾತ್ಯನತ್ಯಧಿಕ ವೇಗದಿಂ ಪೃಥ್ವಿಯೆರಸನನ್ನ ರಸುತೈತರುತ್ತೆದುರಿನಲ್ಲಿ ನಾತಿದೂರದಿ ಮಹೀಮಂಡಲೇಶನಂ ಕಂಡು, ದಂ ಡೆಯೆಲ್ಲಿ ನಡೆತರುವ ನಿಜಭೂಮಿಕಾಧಾರಿಯಾಗಿರುವ ಕುಂಡಲಿಯ ಕಂ ಡು, ತಕ್ಷಣದಲ್ಲಿ ಸರ್ವಸಾರೂಪ್ಯಮಂ ನೋಡಿ, ಮೋಹಿತನಾಗಿ, ಸಚಿವ ತನ್ನಯ ಮನದಿ ತಾನೆ ಮೇಣ್ಹೀರನೋ? ನೃಪನೊಡನೆ ನಡೆತರುವ ಪು ರುಷನೆ ಹೀರನೋ? ಎಂಬ ಸಂಶಯದಾಳ, ಯೋಚಿಸಿ ವಿಮರ್ಶೆಯಂ ಗೈದು, ತಾನೆ ಹೀರನಹಿತನಸ್ಮದ್ರೂಪಮಂ ತಾಳಿ, ನರವರನ ಮೋಹಿಸು ತ್ತೆಲ್ಲಿಗೋ ಕರದೊಯ್ವೆನೆಂಬಂತೆ ತೋರುತ್ತಿದೆ ಯೆಂದವನು ಮನದಿ ನಿಶ್ಚ ಯಗೈದು, ಮೆಲ್ಲಮೆಲ್ಲಗೆ ನೋಡುತ್ತೆದುರಾಗಿ ನಡೆತರಲು; ಕುಂಡಲಿಯು ಕಂಡವನ ಮನದೊಳಾಲೋಚನೆಯ ಮಾಡಿ, ನರಪತಿಯ [illegible] ವನೀಕ! ಕೇಳ್ದುರುಳದಾನವನಿವನು ತನ್ನ ರೂಪವ ಧರಿಸಿ ಬರುತ್ತಿರುವನೇ ಗೈಯ್ಯಲೋಸುಗವೋ ನೋಡೆಂದು ಬೆರಳಿಂ ತೋರಿದನು.

6. ಸುರಪಕರ ಕುಲಿಶಹತಿಯಿಂ। ಮರುಗುತ್ತಿರೆ ಜನಕನಕಟ ಮೈನಾಕಂ ಸಾ। ಗರದೊಡಲೊಳಡಗಿ ಬಾಳುವ। ಪರಿಯಿಂದಮುಮಸಲಿ ತೊರುವುದೇ ವರಮಲ್ತೇ॥

7 ಸಿರಿ ಪಿಂಗಿದುದು ಧನಿಕಂ। ಪಿರಿದೆಂದಪೆನೊಂದು ಸೇರೆ ದವ

ಸಮುಮನವಂ । ಸಿರಿಗೂಡದಂದು ಮದಂ । ಧರಿಸಿಯೆನೆಲ್ಲವ ತೃಣಕ್ಕೆ ಸರಿಯೆಂದೆಣಿಪಂ ॥

FRIDAY, 22ND NOVEMBER, 10 A.M. TO 1 P.M.

MALAYALAM: TEXT-BOOK AND GRAMMAR.

I. 1. താഴെചെത്തശ്ലോകം അന്വയിച്ച അൎത്ഥംപറയുക :—"അമൃതമിവകിരന്തീമാൎത്തിഭാരംഹരന്തിംപിതൃഗിരമുദയന്തിംപ്രീതിപൂരംവമന്തിം സപദിനിശമയന്തീ സാത്രുവേദംത്യജന്തീ വ്യധിതചദമയന്തീ വാസമാശാംവഹന്തീ."

2. താഴെചെത്തപദ്യത്തെ അതിലുള്ള അലങ്കാരപ്രയോഗങ്ങളെ വ്യക്തമാക്കി ലളിതമായ മലയാളഗദ്യരീതിയിൽ എഴുതുക:—

"ജനനമഹാംബുധിമദ്ധ്യേ വീണിട്ടനിശമുഴക്കും
ജനനിവഹങ്ങൾ സുതജനസഹജസ്നിഗ്ദ്ധസ്മാരാം
മുതലകൾവായിൽപാഞ്ഞുംപാഞ്ഞുംജായകളാ
യുള്ളാവൎത്തത്തിൽപൊയി ചെന്നുടനാണുംകേ
ണും ... ... ഉഴെക്കുന്നില്ലെ."

3. 2-ാം വകുപ്പിലെ പദ്യത്തിലുള്ള വാക്കുകളെ ആൎയ്യദ്രാവിഡ വാക്കുകളായി വെറുതിരിച്ച രണ്ടു പട്ടികയായി എഴുതുക.

II. 1. താഴെചേൎത്തപദങ്ങളുടെ നാനാൎത്ഥങ്ങളെ പറയുക :—വാമം, വിട, സാധിക്കുക, വിഭ്രുതി, പുഷ്കരം, ~~വാക്കുകൾ~~ ആഹാരം, പരിചയം, അനുസരണം.

2. താഴെചെത്ത പദങ്ങളെ വിവരിച്ച അൎത്ഥം പറയുക:—കച്ചെലും, ആരവാർ, ചാന്തെലും, പൂഞ്ചായൽ, തൂമൊഴി, കണ്ടിവാർകുഴൽ, വണ്ടാർപൂങ്കുഴൽ, ചിടെഴും, നറുമ്പാൽ, കാലധൎമ്മം, ആനുലോമ്യം, പ്രാതിലോമ്യം, ലാംഗലി. എണ്ണിരണ്ടായിരം, നാമാവശേഷൻ, ഓലക്കം, നിഷ്ക്രിയപുഷ്കര ധൂമകേതു.

3. താഴെചെത്ത പദ്യങ്ങളുടെ അർത്ഥം സ്പഷ്ടമാക്കുക:— (a) എന്തൊന്നു സന്ന്യാസിതൻ ചിന്തിതമെന്നാലതി, ന്നന്തരംവരാതെ നീവശയായി വർത്തിക്കണം, എനിക്കും സന്ന്യാസിക്കു മിക്കണ്ടബന്ധുക്കൾക്കും, നിനക്കും കല്ല്യാണമായി വരുമെന്നറികനീ. (b) ഗോപാലനെന്നങ്ങു ചൊല്ലുന്നിതെല്ലാരും, ഗൊപാലൻ താനുമല്ലൊർത്തുകണ്ടാൽ, ഇല്ലവും ജന്മവും ചിന്തിച്ചുകാണ്കിലൊ, ചൊല്ലാവതല്ലിവനൊന്നു മെതാൻ, അക്ഷനായുള്ളവനെവനെന്നിങ്ങിനെ, നിശ്ചയമുണ്ടെങ്കിൽചൊല്ലിനാലും, കാന്തങ്ങളായ ഗുണങ്ങളില്ലൊന്നുമെ, താന്തൊന്നിയായത്രെപണ്ടെയുള്ളു. (c) തപ്തതോയസിക്തമാല തീവനനക്തമാലമ സ്ഥലമിവനളംക്ഷുത്തുഡാർത്തി ലുപ്തചിത്തമാ ശ്രയിച്ചത്തൽമൂലം ചത്തുപൊകിലാമുടൻ. (d) നിദ്രയുമില്ലാപുന ശ്രുണമില്ലെന്നുവന്നു, നിത്ര്യുംധ്യാനത്തിനു നിഷ്ഠയുമുണ്ടായ്വന്നു (e) പോരാളികളാരാധിതമനുഥമംഗനമാർ ചരണങ്ങൾ വണങ്ങുന്നൊ. (f) ദാരുതൻെറ പരിണാമെകിലനാരിതൻെറ മനമാമെ, എന്നു ചൊല്ലുന്നു ചിലർകല്ലെന്നും ചിലർ, ആരോടെൻെറ സൈവരക്കെട്ടുകളാകവെണ്ടാൻ ചൊല്ലുശിവ ശിവശിവനെ. (g) വിണ്ടലരുള്ളിലിണ്ടൽതിരണ്ടുമണ്ടിവരാതവണ്ണം. (h) മന്ദീകൃതമന്ദാരക വൃന്ദാരക വൃന്ദാരക. (i) വിഘടിതമദകളു സുരഗജഗണ്ഡ, വിഗളിതമൌക്തിക ഭ്രഷ്ടിതനാംഞാൻ.

4. ഇവയിൽ a മുതൽ c വരെ വകുപ്പുകളിൽ എന്തെല്ലാം അലങ്കാരങ്ങൾ അടങ്ങിയിരിക്കുന്നു? e വകുപ്പിലെ "ആരാധിതമനുഥം" എന്ന പദത്തെ വ്യാഖ്യാനിക്കുക.

III. (1) "എന്നൊരു വിധിയവനന്നേര . മുണ്ടാക്കി

യാൻ തന്നുടെമക്കൾ തന്നിൽ വാത്സല്യമുണ്ടാകയാൽ" ൦രം വിധി എന്താണ്? (2) "വന്നതുമത്രെ ദേവകാര്യാത്ഥ സിദ്ധ്യൎത്ഥമായി" താഴെവരയുള്ള പദങ്ങളെ വ്യാഖ്യാനിക്കുക. (3) "നാല്പണത്തോടുകൂടി മാനവൻ ജനിക്കുന്നു." ഇവ ഏതെല്ലാമാണ്? ഇവ ഏങ്ങിനെയാണ വീട്ടുക? (4) "നീസമനല്ലെന്നൊന്നൊടല്ലയൊ ചൊല്ലി മുന്നം നീസമനല്ലെന്നതൊ നിൎണ്ണയമായിതിപ്പോൾ" ഇതിൻെറ കഥാസംബന്ധമെന്ത? (5) "ഒരുത്തനനേക ഭാൎയ്യാക്കളെ യുണ്ടാക്കീടാം" "എനിക്കു വഠിച്ചതെൻ ഭ്രാതാവാകിയ കൃഷ്ണൻ" ഇവയിൽ വല്ല അസാധാരണ പ്രയോഗങ്ങൾ ഉണ്ടൊ. (6) ചക്ഷുഷി-തിരസ്കരണി-൦രം വിദ്യകളെ ക്കൊണ്ടെന്താണ സാദൃശ്യം. (7) "അത്യത്ഭുതതരം സുഭദ്രാസ്വയംബരം"—എന്തുകൊണ്ട! 8. "കുലയുവതികൾ മൌലിമാലെ." "മത്തകൊകിലമായൊരുദ്യാനം" ഇവയിലെ സമാസങ്ങളെ വിവരിക്കുക.

IV. താഴെചെൎത്തവയിലുള്ള അലങ്കാരങ്ങളെ ലക്ഷണ സഹിതം വിവരിക്കുക:—

1. "നിൻെറ ബുദ്ധി രാക്ഷസിയത്രെ"
2. "ഭ്രതിതന്നുള്ളിൽമേവുംകനൽകട്ടകൾപോലെ ഭ്രൂദേവന്മാരായേവും പാണ്ഡുനന്ദനന്മാരെ"

കേതകങ്ങളിൽ മൃഗാങ്കനുദിക്കയെല്ലീ.

V. ദുഷ്യന്തനും ശകുന്തളയും തമ്മിൽഒടുവിലുണ്ടായ സംഭാഷണത്തിൻെറ സാരം ചുരുക്കത്തിയെഴുതുക.

VI. (1) ഹിന്ദുശാസ്ത്രപ്രകാരംഅസത്യംപറയാവുന്ന സംഗതികൾ ഏതെല്ലാമാണ്? (2) പാതിവ്രത്യത്തിൻെറ കാലാന്തരാവസ്ഥാഭേദങ്ങളെക്കുറിച്ച സംഭവ പൎവ്വത്തിൽ നിന്നറിയുന്നതെന്തെല്ലാമാണ? (3) ക

ചോപാഖ്യാനത്തിൽനിന്ന എന്തെല്ലാം അറിവുകൾ സമ്പാദിപ്പാനുണ്ട ?

VII. ദെവയാനി-ശകുന്തള-ദമയന്തി-കചൻ-നളൻ-ഭീഷ്മർ-ഇവരുടെ പ്രധാന സ്വഭാവ ഗുണദോഷങ്ങളെ ഉദാഹരണ സഹിതം വ്യക്തമാക്കുക.

VIII. 1. ദുഷ്യന്തൻ ഒടുവിൽ ശകുന്തളയെയും ഭൂതനെയും സ്വീകരിപ്പാനുണ്ടായകാരണ മെന്താണ ? ശാകുന്തളം നാടകത്തിൽ ഇതിനെ ഭേദപ്പെടുത്തി കാണുന്നതിന്റെ കാരണമെന്തായിരിക്കാം ?

2. സന്ന്യാസിയെ അർജ്ജുനനെന്ന സുഭദ്ര അറിഞ്ഞതെങ്ങനെയാണ ? ഇതിനെക്കുറിച്ച ഭാരതത്തിലും കൃഷ്ണഗാഥയിലും പറഞ്ഞതിൽ വല്ല വ്യത്യാസവുമുണ്ടൊ ?

IX. മത്സ്യവല്ലഭന്റെ ഹിമവദ്വർണ്ണനയെ കവിയുടെ വാക്കുകളിൽ തന്നെയൊ വാചകപുഷ്ടി കുറയാതെ ഗദ്യരീതിയിലൊ എഴുതുക.

X. പുരാണം ഇതിഹാസം-ഇവ തമ്മിലുള്ള വ്യത്യാസമെന്താണ ? മഹാഭാരതം ഇവയിൽ എതകൂട്ടത്തിലാണ ചെരുക.

XI. താഴെചെത്ത വാചകങ്ങളെ അവയിലെ പദങ്ങൾമാത്രം ഉപയോഗിച്ച പദ്യരീതിയിലെഴുതുക.

അതുനേരംനിജ്ജരാധിപ സുതൻ "അർജ്ജുനൻ ബാണാസ നംസജ്യംകത്തും അഗ്നിജ്വാലാ ഉജ്ജ്വലിച്ചപൊങ്ങുംപോലെ സത്വരം സജ്ജനസഭവന്ദിച്ച വിജ്വരമനസാ ഉത്ഥാനംചെയ്തീടിനാൻ അതുനെരം വിപ്രന്മാർമേൽ പുടവയും വീശി ദ്വിജകുമാരന്ന വിഭ്രമമുണ്ടാവാൻ എന്ത എന്നാർ."

FRIDAY, 22ND NOVEMBER, 2 TO 4 P.M.

MALAYALAM: TRANSLATION.

I. Translate into Malayalam:—[See Urdu Translation Paper, page clv.]

II. Translate into English:—

1. ഓക്കുന്ന താകിലിന്നിന്നുടെ വൈഭവ
ഭാക്കുമെ കാണാവതല്ലയെതും
എന്തൊരുവേലക്കു ബന്ധമില്ലാതനീ
ബന്ധമുണ്ടെന്നു തോന്നിക്കുന്നു
ഒമ്പതുവാതിലുള്ളുമ്പലം തന്നിൽപൂ
ക്കമ്പുപൊഴിഞ്ഞു വസിച്ചു ചെമ്മെ
അമ്പലംതന്നെ യിനിക്കുള്ളുതെന്നു മ
ങ്ങമ്പലമായതു ഞാൻ താനെന്നും
സന്തതമിങ്ങിനെ ചിന്തിച്ചുകൊൾവാനായി
രണ്ടായിനിന്നെ പകുത്താൽ പിന്നെ
ഊണുമുറക്കും തുടങ്ങിനതെല്ലാമെ
വെണമൊരുത്തനു പാർത്തുകണ്ടാൽ
മറെറവനായ നിനക്കുനിനക്കുമ്പോൾ
മുററും വിളക്കമൊ മററു വെണ്ടേ.

2. ഇഭാരിണാ ഗുഹായഥാനഭൊയഥാ സുധാംശുനാ
അഭാജിസാസഭാതദാ വിലാസിനാവലാരിണാ
ഏതാശനൻപ്രജാന്തകൻ ജലേശനെന്നുമുവ്വരും
സുഹൃത്തുരേണഭാസുരെ പുരാജിരെവിരേജിതെ

3. മലയുംപരമുലവും ക്ഷിതിനിലയും ലഘുചലിയും
കലിതചടുല കടുചപെടപടലവി
ഘടിതമായിയുടന സംശയംമമ.
യജ്ഞതവിദ്യാംഗക്രിയാതല്പ രമ്മാരായിനാനാ
വിജ്ഞതാനജ്ഞതാനാദികൊണ്ടു ജ്ഞാനം അകന്നീടും
യജുർവ്വേദികളും ഋഗ്വേദികളായുള്ളോരും
ഋജുമാർഗ്ഗത്തോടതി മധുരഗാനത്തോടും

സാമവേദികളോടു ഭാരുണ്ഡസാമഗന്മാർ
സൊമപാനാദികൊണ്ടു പൂതമാനസന്മാരും
തൈത്തിരിയാദിശാഖാഭേദങ്ങൾ ബഹുവിധം
മൂർത്തിഭേദങ്ങൾചൊല്ലും സൂക്തങ്ങൾപലതരം
സൂത്രങ്ങൾവെല്ലുന്നോരും ബ്രാഹ്മണവേദികളും
ശാസ്ത്രസിദ്ധാന്ത വ്യാഖ്യാനാർത്ഥ തല്പരന്മാരും
അഥർവ്വാംഗിരസ്സാമഭേദ സംഹിതഗാനം
പദസംക്രമസ്വരമാത്രാദി ശിക്ഷയോടും
ശബ്ദസംസ്കാരത്തോടും വാക്യഭേദാർത്ഥത്തോടും
സൂപ്തിങന്താദിബോദ്ധ്യ സൂത്രവൃത്തികളോടും
ശിക്ഷവ്യാകരണവും ഛന്ദസ്സംനിരുക്തവും
സൂക്ഷ്മജ്യോതിഷം കല്പം ഇവററിൻമതഭേദം
മോക്ഷധർമ്മോക്തമീമാംസാദികൾ ഉപനിഷൽ
വാക്യാർത്ഥവിശേഷദ വ്യാഖ്യാനമതങ്ങളും
ദ്രവ്യഭേദവും കർമ്മഭേദവും കാലഭേദം
ദിവ്യമാനുഷഭേദം സവ്യാപസവ്യഭേദം
കർത്തൃഭേദവും ക്രിയാഭേദവും ഗുണഭേദം
കൃത്യാകൃത്യാ ചാരപ്രായശ്ചിത്തഗ്രന്ഥങ്ങളും
അഭ്യസിച്ചീടും മുനിവർഗ്ഗവും ശിഷ്യകളും
പ്രീത്യാകണ്ടുണ്ടായൊരു പരമാനന്ദത്തോടും
ഭീത്യാസാത്വികമത്യാ മജ്ജനുഭൂതരഗത്യാ
നീത്യാസജ്ജനരീത്യാ മനസീപൂർണ്ണഭക്ത്യാ
സ്വാദ്ധ്യായശ്രവണ സന്തുഷ്ടനായി ഗുരുമനു
കാശ്യപതപൊഗുപ്തം ആശ്രമം അകംപുക്കാൻ.

5. സടികധവളഭാസം ഫുല്ലകുന്ദാപഹാസം
കനകഗിരിശരാസം കല്മഷധ്വാന്തഹംസം
വിഹിതപുരനിരാസം വാങ്മയീതീരവാസം
ഭജതബഹുവിലാസം ബാലചന്ദ്രാവതംസം.

FRIDAY, 22ND NOVEMBER, 4-5 TO 5-5 P.M.

VERNACULAR COMPOSITION.

Write an essay in your language on *one* of the following subjects:—

The highest kind of education is that which gives power rather than knowledge

or

Education at a public school as compared with that under a private tutor.

OPTIONAL BRANCHES.

BRANCH I.

MONDAY, 20TH JANUARY 1890, 10 A.M. TO 12 NOON.

EUCLID AND GEOMETRICAL CONICS.

I. If the vertical angle of a triangle be bisected by a straight line which likewise cuts the base, the rectangle contained by the sides of the triangle is equal to the rectangle contained by the segments of the base together with the square on the straight line which bisects the angle Given the base and the vertical angle of a triangle, find when the rectangle contained by the sides is a maximum.

II. If a straight line be at right angles to a plane, every plane which passes through it shall be at right angles to that plane.

$AXX'A'$, $BXX'B'$ are two planes intersecting in XX', and a straight line is drawn perpendicular to the plane AA': show that if PN be drawn from any point P in this line perpendicular to the plane BB', the locus of the point N will be a straight line at right angles to XX'.

III. Prove that the middle points of a system of parallel chords of a conic lie in a straight line Hence show that the tangents at the extremities of any chord intersect on the diameter which bisects the chord.

IV. Prove that the rectangles under the segments of two intersecting chords of a conic are in the ratio of the parallel focal chords.

Prove that the chords of intersection of a conic and a circle are equally inclined to the axis.

V. Determine the locus of the feet of perpendiculars let fall from the foci of an ellipse upon the tangent at any point. Deduce (or prove independently) the corresponding property of a parabola.

VI. If from any point P of a hyperbola PH, PK be drawn parallel to the asymptotes meeting them in H and K respectively; then $4\,PH.\,PK = CS^2$

If PH, PK, produced if necessary, intersect any diameter in R and V, and if the parallelogram $PRQV$ be completed; show that Q is a point on the curve.

VII. Find the position of the foci of a plane section of a cone.

If C, C' be the centres of the spheres employed, show that a sphere described on CC' as diameter will cut the plane section in the auxiliary circle.

MONDAY, 20TH JANUARY, 2 TO 5 P.M.

ALGEBRA, THEORY OF EQUATIONS, AND PLANE TRIGONOMETRY.

I. Find the number which is expressed by the same two digits whether the scale of notation be 7 or 9.

II. Simplify $\dfrac{(y-z)(y+z)^3+(z-x)(z+x)^3+(x-y)(x+y)^3}{(y+z)(y-z)^3+(z+x)(z-x)^3+(x+y)(x-y)^3}$; and show that, if $a+b+c+d=0$, then $a^3+b^3+c^3+d^3=3abcd\left(\dfrac{1}{a}+\dfrac{1}{b}+\dfrac{1}{c}+\dfrac{1}{d}\right)$.

III. Show that the number of solutions in positive integers (including zero solutions) of the equation $x+2y=n$ is $\frac{1}{4}\{2n+3+(-1)^n\}$.

At an entertainment, the prices of admission were 1*s.*, 2*s.*, and £5, and the total receipts were £1000; show that there are 1005201 ways in which the audience could be made up.

IV. Solve the equations

(i.) $x^6-14x^4+1=0$

(ii.) $\begin{cases} x+y+z=1 \\ x^2+y^2+z^2=13 \\ x^3+y^3+z^3=19 \end{cases}$

V. Prove the exponential theorem, explaining clearly any points of difficulty in the proof. If n be large, so that the square and higher powers of $1/n$ may be neglected, show that

$$\left(1+\frac{1}{n}\right)^n=e\left(1-\frac{1}{2n}\right)$$

VI. Show that the condition that the equation $x^3+px^2+qx+r=0$ may have two equal roots is $(4q-p^2)(4pr-q^2)=r(27r-2pq)$.

If a, b, c, are the roots of the equation $x^3+Ax^2+Bx+C=0$, form the equation whose roots are $a\pm\sqrt{bc}$, $b\pm\sqrt{ca}$, $c\pm\sqrt{ab}$.

VII. Show that if a be a root of the equation $8x^3-4x^2-4x+1=0$, so also is $1-2a^2$. Having given that $\cos\frac{1}{7}\pi$ is a root, specify the other roots.

VIII. Define the first derived function of a given function, and prove that an odd number of real roots of $f'(x)=0$ lies between every two real roots of $f(x)=0$. Show that $x^3+3x^2+x-6=0$ has only one real root, and find its value correct to 3 places of decimals.

IX. The centres of the circles escribed to a triangle ABC are E_1, E_2, E_3. The circle circumscribing $E_1E_2E_3$ meets E_1A, E_2B, E_3C, produced, in A', B', C' respectively. Prove that

$$E_1A'\sec\tfrac{1}{2}(B-C)=E_2B'\sec\tfrac{1}{2}(C-A)=E_3C'\sec\tfrac{1}{2}(A-B).$$

X. Prove De Moivre's theorem, and apply it to express $\tan n\theta$ in terms of $\tan\theta$. Obtain the complete expression when $n=7$.

If $\tan\theta=x+\tan a$, prove that

$$\theta = a + x\cos a.\cos a - \frac{x^2}{2}\cos^2 a \sin 2a - \frac{x^3}{3}\cos^3 a \cos 3a$$

$+\frac{x^4}{4}\cos^4 a \sin 4a + \ldots$ and deduce Gregory's series for $\frac{1}{4}\pi$.

XI. If $x + \frac{1}{x} = 2\cos\theta$, prove that $x^n + \frac{1}{x^n} = 2\cos n\theta$, and $x^n - \frac{1}{x^n} = 2i \sin n\theta$.

Prove that $2^9 \sin^4\theta\cos^6\theta = \cos 10\theta + 2\cos 8\theta - 3\cos 6\theta - 8\cos 4\theta + 2\cos 2\theta + 6$.

TUESDAY, 21ST JANUARY, 10 A.M. TO 1 P.M.

ANALYTICAL CONICS.

I. Find the area of a triangle the co-ordinates of whose angular points are given.

Aa, Bb, Cc, etc., are lines fixed in length and position, and a point P moves so that the sum of the triangles PAa, PBb, PCc etc. is constant. Shew that the locus of P is a straight line.

II. Shew that the equation of any right line may be put in the form $Ax + By + C = 0$, and examine the geometrical meaning of the cases in which (i.) $A=0$, (ii.) $C=0$, (iii.) $A=0$, $B=0$.

Find the equation of the lines joining the origin to the points of intersection of the parabola $y^2 = 4ax$ and the circle $(x-b)^2 + y^2 = c^2$.

III. Define the radical axis of two circles, and prove that the equation of a system of circles every pair of which has the same radical axis can be put in the form $x^2 + y^2 - 2ax = c$, where c is the same for all the circles. Prove that if a circle cut orthogonally two circles of a coaxal system it cuts orthogonally every circle of that system.

IV. Find the equation of the pair of tangents drawn from the point (h,k) to the conic $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$.

Prove that the two tangents drawn from any point of the hyperbola $x^2 - y^2 = a^2 - b^2$ to the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ make complementary angles with either axis.

V. Prove that the equation of the normal to a parabola at a point P may be put in the form $y = mx - 2am - am^3$, and express the co-ordinates of P in terms of m. If the normals at P, P′ on a parabola meet the axis in G, G', shew that the line bisecting PP′ at right angles bisects the line GG'.

VI. Shew that in an ellipse the middle points of chords parallel to a diameter PP′ lie on a fixed diameter DD' and prove that this relation is reciprocal. Find when the angle between PP′ and DD' is greatest.

VII. Establish the condition that the line $lx + my = 1$ should touch the conic $ax^2 + by^2 = 1$. A straight line moves so that the sum of the squares of its distances from two fixed points is constant. Prove that it always touches a conic.

VIII. Prove that the polar equation of a rectangular hyperbola is $= \frac{a}{1-\sqrt{2}\cos\theta}$, where a is the semi axis.

Shew that the equation of its asymptotes is

$$r = a \sec\left(\frac{3\pi}{4} \pm \theta\right).$$

IX. Find the condition that the equation

$$ax^2+2hxy+by^2+2gx+2fy+c=0$$

should represent a pair of right lines, and if this condition is satisfied find the equation of each line.

What are the co-ordinates of the point of intersection of the two lines whose equation is $3x^2+11xy+6y^2+11x+5y-4=0$?

Trace the curve $39x^2+20y^2-120xy-162x-40y-21=0$

TUESDAY, 21ST JANUARY, 2 TO 5 P.M.

DIFFERENTIAL CALCULUS.

I. Define a differential coefficient, and give a geometrical illustration. Obtain directly from the definition the differential coefficients of a^{mx}, $\log^a \frac{x}{n}$, $\cos\frac{x}{a}$.

II. Differentiate $\log_e \sqrt{\frac{x-\sqrt{1-x^2}}{x+\sqrt{1-x^2}}}$, $\tan^{-1}(\sqrt{1+x^2}-x)$

If $\frac{x}{\phi(y)}+\frac{\phi'(y)}{x}=m$, show that $\frac{dy}{dx}=\frac{\phi(y)}{x\phi'(y)}$.

III If $u=e^x\cos\theta\cos(x\sin\theta)$, prove that $\frac{d^nu}{d^nx}=e^x\cos\theta\cos(x\sin\theta+n\theta)$

Also if $\log y=\tan^{-1}x$ shew that

$$(1+x^2)\frac{d^{n+1}y}{dx^{n+1}}+(2nx-1)\frac{d^ny}{dx^n}+n(n-1)\frac{d^{n-1}y}{dx^{n-1}}=0.$$

With the aid of these results, expand u and y in series of ascending powers of x.

IV. Given that $\phi(a)=0$, $\psi(a)=0$, shew how to evaluate $\frac{\phi(x)}{\psi(x)}$ when $x=a$.

Evaluate $\frac{2\sin x-(x+2)\log(1+x)}{x-\sin x}$ when $x=0$,

$\frac{x^{\frac{2}{3}}-1+(x-1)^{\frac{2}{3}}}{(x^2-1)^{\frac{2}{3}}-x+1}$ when $x=1$.

and $\left(\frac{1}{x}\right)^{\tan x}$ when $x=0$.

V. From the sign of $\phi'(x)$ determine whether $\phi(x)$ increases or diminishes as x increases. Hence deduce the conditions for a maximum or minimum value of $\phi(x)$.

If $\phi'(x)=(x-a)(x-b)/(x-c)$ where a, b, c are in ascending order of magnitude, find the values of x which makes $\phi(x)$ a maximum or a minimum.

Points P and Q are taken in two fixed lines OA, OB respectively such that the area of the triangle OPQ is constant. Find the length and position of PQ when it is a minimum.

VI. Shew how to find the envelope of a family of curves represented by the equation $F(x, y, a)=0$, in which a is a variable parameter. Find the envelope of the circles which pass through the centre of a given ellipse and have their centres on its circumference.

VII. If ϕ be the angle between the radius vector and the tangent at the point (r, θ), $\tan\phi=\frac{rd\theta}{dr}$; and if p be the perpendicular upon the tangent from the origin, and ρ the radius of curvature at the given point, $\rho=\frac{rdr}{dp}$. Find the values of ϕ, p, ρ in the case of the logarithmic spiral $r=be^{m\theta}$: and if r_1 be the radius vector and p_1 the perpendicular upon the tangent at the corresponding point of the evolute, shew that $p : p_1 :: r : r_1$.

VIII. Find the length of the polar subtangent at any point of a curve. Explain its importance in determining the position of the asymptotes. Find the asymptotes of the curve $r\tan n\theta=a$. Shew that they all touch the circle $r=\frac{a}{n}$.

IX. Shew how to find the position and the nature of the double points of a curve; and find the condition for a point of inflexion.

Trace the curves

$$x^2(a+x)=y^2(a-x).$$
$$x^2(x+y)=a^2(x-y).$$

WEDNESDAY, 22ND JANUARY, 10 A.M. TO 1 P.M.

DYNAMICS.

[*Full marks will be awarded for answering about three-fourths of the paper.*]

I. Distinguish between the weight of a body and its mass. Does a spring-balance measure the weight or the mass?

Explain the terms *work* and *energy*. Illustrate your explanation by considering the motion of a particle down an inclined plane.

II. Enunciate Newton's Second Law of Motion, and explain how it furnishes a method of measuring force.

The forces acting upon a train whose mass is 100 tons have a resultant in the direction of motion equal to the weight of 1000 lb. In what time will it acquire from rest a velocity of 60 miles an hour?

III. A particle starts from rest and moves for t seconds with an acceleration f feet per second per second. Prove that the space described is $\frac{1}{2}ft^2$ feet. A point passes over h feet in 2 seconds; after an interval of t seconds, it is observed to pass over k feet in 2 seconds. Find its acceleration.

IV. In an Atwood's machine, the masses suspended A and B each contain M lb. A small mass C of m lb. is placed on the mass A. Find the resulting acceleration and the tension of the string.

If in the second system of pullies there are n strings at the lower block, prove that the upward acceleration of W due to a power P will be $\frac{nP - W}{n^2P + W}g$.

V. Explain what is meant by an impulse.

A 40-ton gun projects horizontally a bolt of 2 cwt.; find how far the recoil of the gun will force it up a smooth inclined plane of 30°, if the initial velocity of the bolt when fired is 2,000 feet per second.

A weight P after falling freely through a feet begins to raise a weight Q greater than itself, and connected with it by means of a string passing over a smooth fixed pulley. Shew that Q will return to its original position after an interval $\frac{2P}{Q-P}\sqrt{\frac{2a}{g}}$.

VI. Shew that the path of a projectile is a parabola.

If a particle projected with a velocity u strike at right angles a vertical wall whose distance from the point of projection is $\frac{u^2}{2g}\cos\phi$, prove that the angle of projection may be $\frac{\pi}{4} + \frac{\phi}{2}$ or $\frac{\pi}{4} - \frac{\phi}{2}$ and that the distance between the points at which it will strike the wall if projected at these elevations successively is $\frac{u^2}{2g}\sin\phi$

VII. A particle impinges obliquely on a smooth plane. Find its motion after impact. A parabola is placed in a vertical plane with its axis vertical and vertex downwards. A heavy particle strikes the curve in a direction making an angle $\sin^{-1}\frac{1}{\sqrt{5}}$ with the normal with a velocity due to five-eighths of the latus rectum, and after rebounding passes through the vertex. Find where it strikes the curve, the co-efficient of restitution being $\frac{1}{2}$.

VIII. Find the conditions of equilibrium of a system of co-planar forces acting on a rigid body.

IX. Define the centre of mass of a body, and shew how to find that of three equal particles placed at the angular points of a triangle.

Where must a circular hole of 1 ft. radius be punched out of a circular disc of 3 ft. radius, so that the centre of gravity of the remainder may be 2 inches from the centre of the disc?

X. State the laws of limiting friction and shew that the direction of the resultant action between two rough surfaces in contact at a point always lies within a certain cone. A uniform ladder rests in limiting equilibrium with its lower end in contact with a rough horizontal palne and its upper end in contact with an equally rough vertical wall. Shew that if α be the angle the ladder makes with the wall, $\tan\alpha = \frac{2\mu}{1-\mu^2}$, where μ is the coefficient of friction.

XI. A point moves with a constant velocity along the circumference of a circle of radius r. Shew that it has a constant normal acceleration $\frac{v^2}{r}$. A body describes a circle of radius 3 yards on a smooth horizontal plane, being attached to the centre by a string of length equal to the radius. Assuming that the greatest tension that the string can bear without breaking is the weight of 12lb., find the mass of the body if it can just make 160 revolutions a minute without breaking the string.

XII. Find the moment of inertia of a uniform circular cylinder (1) about its axis, (2) about a generating line.

THURSDAY, 23RD JANUARY, 10 A.M. TO 1 P.M.

HYDROSTATICS, PNEUMATICS, AND OPTICS.

[*Full marks will be awarded for answering about three-fourths of this paper.*]

I. Prove that the pressure at any point of a fluid is the same in all directions. Prove that the increase of pressure in a heavy fluid is proportional to the increase of depth.

II. Show how to find the resultant horizontal pressure in a given direction on any surface immersed in fluid. What is the *total pressure* on a surface immersed in fluid?

An isosceles triangle ABC is immersed in fluid with the vertex A in the surface and the base BC horizontal. If AB is produced to D so that the pressure on the triangle DBC is equal to the pressure on the triangle ABC, prove that $BD : AB :: 4 : \sqrt{17}+3$.

III. What is meant by the term *centre of pressure?* Show how to find the centre of pressure of a triangle immersed in fluid with a side horizontal and the opposite angular point in the surface.

A square lamina is immersed in fluid with its plane vertical, an angular point in the surface, and the diagonal passing through that point inclined at an angle θ to the vertical. Prove that the depth of its centre of pressure is $d \sec\theta \left(\frac{1}{3} + \frac{\cos 2\theta}{4}\right)$, d being a diagonal of the square.

IV. Explain how the specific gravity of a liquid may be found with a hydrometer having a stem of uniform section graduated with equal divisions.

The zero mark on a hydrometer graduated with equal divisions is the point to which the hydrometer sinks in a solution of salt and water of specific gravity 1·08, and the point to which it sinks in water is marked 10. Find the specific gravity of a mixture of spirit and water in which the hydrometer sinks to the point marked 35.

V. Explain the construction and use of a mercurial barometer.

Show how to find an expression for the altitude of a station above the sea level in terms of the height of the barometer and its height at the sea-level. State clearly the assumptions on which your calculation is based.

VI. Describe the common air-pump, and explain its action. Describe the form of gauge with which you are best acquainted.

In a common air pump the diameter of the piston is $1\frac{1}{2}$ inches, the length of the stroke 6 in., and when at the bottom of its stroke the piston is $\frac{1}{4}$ in. from the bottom of the barrel. If the pump be used to exhaust a globe of $7\frac{1}{2}$ in. diameter, find the density in the globe after three strokes of the piston.

VII. State Boyle's Law, and explain how it may be experimentally verified in the case of air for pressures less than atmospheric.

State the Law of Charles (or Gay Lussac), and prove that the product of the volume and the pressure of a given quantity of gas is proportional to its absolute temperature.

VIII. A luminous object is placed between two plane mirrors inclined at any angle. Show how to find the positions of the images formed by successive reflexions at the mirrors and the total number of images formed. Prove that if one of the mirrors revolve with uniform angular velocity about their line of intersection, the image formed after any number of reflections (the first taking place at the moving mirror) moves with constant speed on the circumference of a circle. Find the total number of images when the angle between the mirrors is 37°.

IX. A ray of light passes through a prism in a principal plane. Show how to find the minimum deviation.

A prism of refracting angle $2i$ is placed between two prisms of the same refracting angle i, so that the faces of the middle prism are respectively in contact with a face of each of the outside prisms, its edge is parallel to their edges, and its refracting angle opposite to their refracting angles. Prove that if μ_1 be the index of refraction of each of the outside prisms, μ_2 $(>\mu_1)$ that of the middle one, the whole deviation (δ) of a ray which traverses the system in a principal plane so as to pass from the first prism to the third with minimum deviation, is twice the angle of incidence, and that

$$\sin^2\tfrac{1}{2}\delta-\mu_2\sin 2i\,\sin\tfrac{1}{2}\delta+(\mu_2^2-\mu_1^2)\sin^2 i=0.$$

X. Show how to find the geometrical focus of a pencil of rays after direct refraction through a lens (1) when the thickness is taken into account, (2) when the thickness is neglected. Explain a method of determining practically the focal length of a thin convex lens.

XI. Explain, with the aid of a diagram, how a pure spectrum may be formed with rays of light proceeding directly from the sun or from a candle. What is meant by the irrationality of dispersion? Find the condition that an object-glass formed of two lenses in contact should be achromatic.

XII. An astronomical telescope fitted with a Ramsden's eye-piece is adjusted for a person whose distance of distinct vision is a. Trace the course of a pencil of rays through the telescope. Also find the magnifying power, and show that if the telescope be adjusted for a person whose distance of distinct vision is b the eye-piece must be moved a distance $\dfrac{9f^2(a-b)}{(4a+f)\,(b+f)}$, f being the focal length of each lens of the eye-piece.

THURSDAY, 23RD JANUARY, 2 TO 5 P.M.

SPHERICAL TRIGONOMETRY AND ASTRONOMY.

I. In any triangle ABC, $\cot a \sin b = \cos b \cos C + \cot A \sin C$. If AD the external bisector of the vertical angle meet BC at D, then $\cot AD = \frac{1}{2}(\cot b \sim \cot c) \operatorname{cosec} \frac{A}{2}$.

II. Given the angles A, B and the side a of a triangle, shew how to solve it.

If C_1, C_2 be the values of the third angle, prove that

$$\tan \frac{C_1}{2} \tan \frac{C_2}{2} = \cot \frac{B+A}{2} \cdot \cot \frac{B-A}{2}.$$

III. Express in terms of the sides the radius of the small circle inscribed in a triangle.

If r, r' be the radii of the inscribed and each of the escribed circles of an equilateral triangle, $3 \cot r' = 4 \tan r + \cot r$.

IV. Distinguish between the *geographical* and the *geocentric* latitude of a place. Which of them is obtained direct from observation?

Shew that you could roughly ascertain your latitude by observing the direction of the sun at rising and the length of the shadow cast at noon.

V. Describe and account for the sun's apparent path among the stars. What are the chief arguments in favour of the hypothesis that the earth moves round the sun? Shew that the sun is longer on the northern hemisphere than on the southern.

VI. Explain the causes to which the equation of time is due and trace the changes in the sign of its components in the course of a year.

The sun rose at $6^h\ 29^m$ this morning. Find when it will set, the equation of time being taken to be 12 minutes, and the sun's change of declination being neglected.

VII. What is meant by the precession of the equinoxes? What are its physical causes? Shew that it accounts for the following facts:—(1) The Pole star varies from age to age. (2) The sidereal year exceeds the tropical year by about $20^m\ 25^s$. (3) The signs of the Zodiac do not now correspond with the constellations of the same name.

VIII. Explain the nature of *aberration*, and its effect on the apparent positions of the fixed stars. Why is it that a meteoric shower may be expected to recur at the same day of the year and why do the meteors appear to radiate from a certain point of the sky?

IX. Account for the phases of the moon in the course of a month and shew how a lunar eclipse arises. On a certain day the moon was seen on the meridian of Madras at 4 P.M. What was her age? Was her eastern or western limb illuminated? At the time of the new-moon on the 22nd December 1889, the sun was $2^\circ\ 23'\ 11''$ to the west of the moon's node. Find the number of the lunar or solar eclipses that will occur in 1890 and the dates of their occurrence.

BRANCH II.

MONDAY, 20TH JANUARY, 10 A.M. TO 1 P.M.

PHYSICS.

Candidates must not attempt more than 3 questions in each of sections A, C, D, E, and 2 in section B.

A.

I. 1. Explain clearly the relation of *energy* to *force* and to *momentum*. Give the C.G.S. units of each of these three quantities in terms of the fundamental units.

2. A rifle ball, weighing 1 oz., meets with a velocity of 1000 feet per second a mass of wood, weighing 50 lb., suspended like a pendulum and at rest. Find the velocity imparted by the ball, which sinks into the wood; and find whether there is any loss of (*a*) momentum, or (*b*) visible energy, explaining this loss if any.

II. Assuming that the distance of the moon from the centre of the earth is 240,000 miles, or 60 times the earth's radius, and observing that the time of one revolution of the moon round the earth is 27 days, 7 hours, 14 minutes, show that if it be the same force that draws a stone to the earth and that keeps the moon in an (approximately) circular path round the earth, this force is one varying inversely as the square of the distance.

III. 1. Explain the principle of the siphon, and show upon what its rate of discharge depends.

2. A rectangular vessel 10 cm. long by 6 cm. broad is filled with mercury to the depth of 6 cm. at the deepest part, when the bottom is inclined at 30° to the horizon. If the specific gravity of mercury is 13·6, find the whole pressure on the bottom of the vessel.

IV. 1. Briefly describe how you would illustrate experimentally (*a*) osmose of liquids, and (*b*) diffusion of gases.

2. Explain, in accordance with the doctrine of the conservation of energy, the function of any machine.

B.

V. 1. If the density of carbonic acid and of hydrogen be respectively 1·529 and ·069, compared with air at the same temperature and pressure, find the relative velocity of sound in each of these gases, as compared with that in air

2. If the density of common air be reduced to one-fourth of its normal density, the temperature remaining the same, explain whether this will affect (*a*) the velocity, (*b*) the intensity of sound in the air, and how.

VI. Briefly describe Melde's experimental method of proving the laws of vibration of a sounding string, as depending on its length, thickness, tension, and mass.

VII How would you experimentally determine the relative velocity with which sound travels along two rods of different materials such as brass and steel. Explain clearly the underlying principle on which your experiments depend.

C.

VIII. Describe some method for counteracting the effect of changes of temperature on the rate of a clock or watch.

IX. 1. Define thermal conductivity.

2. If the four sides of a cubical room be each 10 square metres in area, and 6 decimetres thick, and if the thermal conductivity of the walls, be ·007, how much heat will be lost in half an hour by transmission through the walls, if the inside temperature be kept at 25°C, while that outside is 5°C ?

X. Discuss the peculiarity of water in respect of its specific heat and latent heat—whether in the solid, liquid, or gaseous state—and show the importance of this in the economy of nature.

XI. Compare the quantity of heat needed to raise 5 kilograms of ice from—10°C to 40°C with that needed to raise the same mass of water from + 10°C to 40°C.

D.

XII. 1. State and prove the laws of luminous intensity

2. How would you find the candle-power of a given kerosene-lamp flame ?

XIII. 1. Establish the ordinary formula which connects the positions of the conjugate foci of a hollow spherical mirror with the radius of the mirror.

2. Show, by a figure, the position and size of the image when the object is placed in front of such a mirror at a distance of one-fourth of its radius.

XIV. 1. Explain clearly why a beam of light cannot be refracted through a right-angled glass prism, but can be refracted through a right-angled water prism.

2. A candle is placed at a distance of 5 feet from a screen, where must a double convex lens of 1 foot focal length be placed so as to throw a distinct image of the flame on the screen ?

XV. 1. If a strip of carbon or a platinum wire, stretched in front of the slit of a spectroscope, be slowly heated by means of a galvanic current of gradually increasing strength, describe what you would see in the spectroscope.

2. If you write, with black varnish, some letters on a plate of platinum, heat the plate to a white heat, and then quickly examine the white-hot plate in the dark, describe and explain the appearance now presented by the plate.

E.

XVI. 1. State the fundamental law of electric attraction or repulsion between two quantities of electricity q, q' placed at a distance d; and describe briefly the experimental proof with Coulomb's torsion balance.

2. What is the source of the electric energy in (1) an ordinary plate machine, (2) the electrophorus, (3) the galvanic current ?

XVII. If the magnetism of the earth be due to electric currents flowing round it, deduce from Ampère's law the direction in which these currents must be flowing.

XVIII. 1. State Ohm's law for the current strength of a battery; and show clearly how we should arrange a battery so as to get

greatest strength of current (1) when the external resistance is great, (2) when it is small.

XIX. Briefly explain the principle of the electric telephone.

MONDAY, 20TH JANUARY, 2 TO 5 P.M.

CHEMISTRY.

Not more than eight questions are to be attempted.

I. Compare the amount of energy possessed by a pound of charcoal 1000 feet high, owing to its position with regard to the earth, with that which it possesses on account of its attraction for oxygen.

It has been calculated that a body approaching the sun from an infinitely great distance would acquire a velocity of about 2,000,000 ft. per second, before striking the sun's surface. If the body were a pound of charcoal, compare the amount of energy it would possess owing to this velocity with that due to its combustibility.

[The calorific power of carbon is 8080, *i.e.*, 1 gram of carbon on burning will produce as much heat as will raise 8080 grams of water through 1°C. The mechanical equivalent of heat is 1390, *i.e.*, 1 lb. of water falling from a height of 1390 ft. and having its motion suddenly arrested will have its temperature raised 1°C.]

II. Two gaseous compounds of sulphur contain respectively 94·12 and 84·21 per cent. by weight of that element, and their respective vapor densities are 17 and 38 (H=unity). Calculate the weight of sulphur in the molecular weight of each compound, and state whether one of these weights can be taken as the atomic weight of sulphur without further evidence. If further evidence is necessary state its nature.

III. Define the term 'molecule' in the case of (1) an element, and (2) a compound. Give the symbols used to represent an atom and a molecule of each of the following elements:—hydrogen, oxygen, phosphorus, chlorine, arsenic, mercury.

What is the weight in criths and in grams of one litre of each of the above mentioned elements in the gaseous condition under standard conditions of temperature and pressure, and what is the volume, under similar conditions, of the molecular weight of each element taken in grams? (1 crith=0·0896 gram.)

IV. You are given some fluorspar, sand, and sulphuric acid. State what compounds you can prepare from them, describe the methods you would employ in preparing these compounds, and write equations on the changes which occur in their production.

V. Carbon dioxide and sulphur dioxide are gases which contain their own volume of oxygen. How would you give an experimental proof of this statement?

VI. Assuming that air contains one-fifth of its volume of oxygen, what volume of air is necessary for the complete combustion of five litres of marsh gas, and what volume will the products of the combustion occupy at 100°C.?

VII. The aqueous solution of a yellow salt undergoes the following changes:—With HCl the solution turns orange, and on the further

addition of H_2S the solution turns green and a dirty white precipitate is produced. A portion of the filtrate from this precipitate after boiling to remove H_2S gives a precipitate with NH_3 and NH_4Cl; another portion of the filtrate on addition of a solution of $BaCl_2$ gives no precipitate or colour change. The original aqueous solution of the yellow salt gives no precipitate or colour change with NH_3 and NH_4Cl; but it gives a yellow precipitate on addition of a solution of $BaCl_2$. Give the name of the yellow salt, and explain all the above results, positive and negative. Write down the equations?

VIII. How many oxides of manganese are known, to which class of oxides does each belong, and how does each behave with hydrochloric acid? How would you obtain potassium manganate and potassium permanganate from manganese dioxide?

IX. How may hydrogen dioxide be prepared? Give instances both of its oxidizing and reducing action.

X. Mention some of the most important chlorides of non-metallic elements, and compare their properties with those of metallic chlorides. Give general methods for preparing both classes of compounds.

PRACTICAL CHEMISTRY.

I. You are required to ascertain the composition of the powder marked **A**, so far as it is possible to do so by dry tests alone.

II. The powder marked **B** is to be examined both in the dry and wet way.

III. The solution is to be examined in any way you choose.

N.B.—All the work done in the examination of the substances given for analysis should be written down in a concise and systematic manner. No value will be attached to any results arrived at, unless it is clearly shown how they have been obtained.

BRANCH II.A.

TUESDAY, 21ST JANUARY, 2 TO 5 P.M.

MIXED MATHEMATICS.

I. Find the direction of the resultant of two forces acting upon a point. If two diagonals of a parallelogram represent two forces, prove that their resultant will be represented by a line equal to twice one of the sides of the parallelogram.

II. 1. Shew that the algebraical sum of the moments of two parallel forces about any point in their plane is equal to the moment of their resultant.

2. A uniform beam weighing 600 lb. and 30 feet in length is laid across a table 4 feet in width with 12 feet projecting on one side and 14 feet on the other. How far can a man weighing 150 lb. walk on the beam on either side of the table?

III. 1. Find the centre of gravity of a quadrilateral figure which has two sides parallel.

2. Six square discs of the same material and thickness, but whose sides are 1, 2, 3, 4, 5, and 6 inches, are arranged in order touching one another with one edge on the same horizontal line. Find the position of the centre of gravity of the squares.

IV. 1. Show that if two weights balance each other on a straight lever in any one position inclined to the vertical, they will balance each other in any other position of the lever.

2. A body when placed on one side of a false balance with unequal arms weighs 18 lb., and when placed in the other scale 12·5 lb. What is its true weight?

V. 1. In the third system of the pulleys find the relation between the power and the weight when there are three pulleys of equal weight. What is the gain or loss in the mechanical advantage arising from the weights of the pulleys?

2. A wheel and axle is used to raise a weight of 100 lb., the diameter of the wheel is 5 ft. 10 in., and for each revolution of the wheel the weight rises 22 inches. Find the smallest force which can turn the wheel.

VI. 1. Find the force required to support a mass of 173 lb. on a plane inclined at 30° to the horizon, if the force is inclined at an angle of 30° to the inclined plane.

2. In a differential axle the radii of the large and small cylinders are respectively 9 inches and 6 inches. If the length of the arm of the handle is 2 feet, what power will be required to lift a weight of 200 lb.?

VII. 1. Prove that the time of falling from rest down a chord of a vertical circle drawn from the highest point is constant.

2. A stone is let fall from the top of a tower, and another is thrown up from the ground at the same instant with a velocity of 96 feet per second: when the stones meet they have the same velocity in opposite directions. What is the height of the tower?

VIII. 1. If a body begins to move along a straight line with a velocity of V feet per second and its motion undergoes a uniform acceleration f, find the number of feet described by it in t seconds.

2. A train starts from rest and moves with regularly increasing speed for 4 minutes, during which time it passes over a mile. What is the speed at the end of the 4 minutes?

IX. 1. Two weights P and Q are attached to the ends of a string passing over a smooth pulley. Show that the acceleration $= g\frac{P-Q}{P+Q}$: and the tension of the string $=\frac{2QP}{P+Q}$.

2. To one end of a flexible string passing over a smooth pulley a mass of 10 lb. is attached, and to the other end two masses of 8 lb. and 4 lb. respectively. If, after the masses have moved for 4 seconds, the 4 lb. mass is removed, how far and how long will the 10 lb. mass continue to ascend?

X. 1. A boat starts from the bank of a river and is propelled with uniform velocity of 3 miles per hour at right angles to the stream which is running at 4 miles an hour. If the boat takes

15 minutes to reach the opposite bank, what is the breadth of the river, and over what distance will the boat have travelled?

2. A train is running up a gradient of 1 in 100 at a speed of 30 miles per hour when the last vehicle, weighing 10 tons, becomes detached: the resistances from friction, &c., are 10 lb. per ton. After a lapse of two minutes, in which direction will the vehicle be moving, and what distance will it be from the point where it parted from the train?

WEDNESDAY, 22ND JANUARY, 10 A.M. TO 1 P.M.

PHYSICS.

N.B.—*Only 3 questions in each of sections A and C and 2 in section B are to be attempted.*

A.

I. 1. What is meant by the coefficient of friction? Explain how it may be practically determined in two ways. In what respects do sliding and rolling friction differ?

2. Find the horse-power of an engine that would impart, in 10 minutes, to a train of 240 tons a velocity of 15 miles an hour up an incline of 1 in 80, the coefficient of friction being $\frac{1}{120}$.

II. 1. If a ball is thrown obliquely *(in vacuo)* find an expression for its range on a horizontal plane; and find for what angle of projection this range is greatest.

2. If we change from a Foot-Pound-Second to a Mile-Ton-Hour system of measuring Work, in what ratio must we alter the unit of work?

III. 1. Show by a clear figure how the stability or instability of flotation of a body depends on the position of the *metacentre.*

2. If a hole be made in the side, or bottom, of a tin vessel, will the addition of a short pipe or tube to the opening increase or diminish the rate of flow when the vessel is filled with water? Give fully the reasons for your answer.

IV. 1. State Boyle's law connecting the volume and pressure of a gas. How is it experimentally proved for pressures *less* than one atmosphere? Is it true for all pressures?

2. *A* and *B* are 2 vessels connected by a tube with a stopcock in the middle. *A* contains hydrogen at a pressure of 200 cm. of mercury; and *B* contains oxygen at a pressure of 400 cm. If the size of *A* is three times that of B, what will be the common pressure of the mixed gases after opening the stopcock, there being supposed no change of temperature?

B.

V. Give Newton's formula for the calculation of the velocity of sound in a gas; and explain clearly how and why it must be modified to make the calculated agree with the observed velocity. What is the corresponding formula for liquids and solids? Does it require similar modification?

VI. 1. Describe and explain the production of Ohladni's sound (or sand) figures.

2. Give some of the practical applications of König's manometric flames.

VII. 1. Briefly describe the general principle of Edison's phonograph.

2. One end of a string is attached to one prong of a tuning fork, while the other end hangs over a small pulley and supports a small weight; on sounding the tuning fork I find that the string is divided into four or into eight segments according to the position of the fork. Explain this.

C.

VIII. Give the principle of the ordinary reflecting sextant, and explain how it is used.

IX. 1. Show by a clear large figure, the principle of the common field, or opera, glass.

2. Calculate the focal length of spectacles suited for a short-sighted person, whose distance of distinct vision is 4 inches.

X. 1. How would you show the interference bands produced by a narrow aperture? How and why do those produced by a grating differ from the former?

2. Find the formula which gives the wave length of the light used in terms of the distance of the screen, width of slit, and position of interference bands observed.

XI. Describe and explain the application of polarized light to determine (1) whether a crystal plate is single or double refracting, (2) the strength of a sugar solution, (3) whether a plate of glass has been annealed or not.

WEDNESDAY, 22ND JANUARY, 2 TO 5 P.M.

PHYSICS.

Only ten questions are to be attempted, of which two should be taken from both A and B and three from both C and D.

A.

I. What do you mean by the latent heat of vapour? Quote the law regarding the evaporation and ebullition of water arrived at by Watt, and show how this law was modified by Regnault.

II. Describe one of the methods by which the linear expansion of solids has been measured. If a be the coefficient of linear expansion per degree centigrade of a solid body whose density at 0° C. is d, what will be its density at 100° C.?

III. What is meant by the spheroidal state of a liquid? Describe any experiments which illustrate it, and give the explanation of the phenomenon.

B.

IV. Give a general idea of the earth's magnetism at the present time, and explain how it may be represented by isogonic, isoclinic, and isodynamic lines. Explain what is meant by the secular changes in the earth's magnetism, especially as regards the isogonic lines.

V. What is meant by magnetic moment? and how may it be measured in terms of the horizontal force of the earth's magnetism?

VI. What is meant by an astatic system of magnets? How and for what purpose is such a system principally used? How can you place a magnet so that it may be rendered astatic without the aid of any other magnet?

C.

VII. Explain what is meant by the specific inductive capacity of any dielectric, and state how it may be compared with that of air.

VIII. Describe Holtz's electrical machine, and explain its action.

IX. Volta by means of a condenser rendered the ordinary gold leaf electroscope very sensitive. Describe the apparatus used by him, and the way in which it was used. Explain the principle on which its action depends

X. Describe Thomson's portable electrometer, and explain why the moveable disc is charged.

XI. Describe any method you know by which the duration of the electric spark has been measured, and give some idea of its duration.

D.

XII. Distinguish between difference of potential and electromotive force. Give any method you know of comparing the electromotive forces of two batteries. What are the names of the practical units of electromotive force and current?

XIII. Describe Lippmann's capillary electrometer, and explain its action.

XIV. Describe the mutual reactions of a magnetic pole and an electric current, and hence explain the action of a galvanometer. Describe the Sine galvanometer, and explain how it is used

XV. What do you mean by a set of resistance coils? How are they used in connection with a differential galvanometer or a Wheatstone's bridge? Show how they may be made to measure both higher and lower resistances than those contained in the set, and explain the principle.

BRANCH II.B.

TUESDAY, 21ST JANUARY, 2 TO 5 P.M.

INORGANIC CHEMISTRY.

Not more than eight questions are to be attempted.

I. How would you classify the various modes of chemical action? Show that the most common of these modes is that known as 'double decomposition,' and that many chemical changes which apparently are instances of union or simple decomposition are really double decompositions. May any of the following reactions be regarded as double decompositions? (1) the decomposition of mercuric oxide, of barium peroxide, and of calcium carbonate by heat, (2) the union of ammonia and hydrochloric acid, of olefiant gas

and chlorine, and of hydrogen and chlorine, (3) the action of chlorine on marsh gas. Give reasons for your answer.

II. The properties and character of the hydrogen atom of a hydroxyl group depend upon the nature of the atom or group of atoms with which the hydroxyl is united; the hydrogen atoms contained in a compound also have properties dependent upon the manner in which the remaining affinities of the atom to which they are joined are satisfied. Explain this statement, and illustrate it by the aid of the following compounds:—potash, water, hypochlorous acid, alcohol, acetic acid, phenol, trinitrophenol, ethane, nitroethane, bromnitroethane, and dibromnitroethane.

III. What is meant by the Periodic Law of the elements, and by what chemists was it propounded? Examplify the relationships and differences between the elements which this law formulates by means of the two series commencing with lithium and sodium and terminating with fluorine and chlorine. To what extent has the law been of service in predicting the existence of undiscovered elements and in correcting the atomic weights of known elements?

IV. The specific heat of a given element is 0·032, and one of its two chlorides contain 26·2 per cent. of chlorine. Assuming that its atomic heat is 6·2, calculate the atomic weight of the element. Is the element in question any of the following:—Ir=192·5, Pt=194·3, Au 196·7? Give precise reasons for your answer.

V. Compare the attractions—(1) of chlorine and iodine for hydrogen, (2) of chlorine and iodine for oxygen, (3) of oxygen and sulphur for oxygen, (4) of sodium and potassium for oxygen, (5) of nickel and iron for oxygen. Mention as many facts as you can bearing on the relative attractions of the above mentioned elements.

VI. Hydrogen chloride contains half its volume of hydrogen, vapor of water contains its volume, and ammonia contains one and a half times its volume. How would you demonstrate these facts experimentally? Sketch the apparatus you would employ for the purpose.

VII. Arrange in a tabular form the oxides and oxyacids of chlorine, bromine, and iodine. In the case of the latter class of compounds mention which are known in the free state and which in a state of combination only. State how each body may be prepared, and give equations for the reactions which occur. What grounds are there for believing that the halogens are heptavalent?

VIII. Describe the phenomena of the diffusion of gases, and describe how the unequal diffusibilities of hydrogen and air may be shown experimentally in a simple manner. If one litre of oxygen diffuses through a certain apparatus in a certain time, what volume of hydriodic acid will diffuse in an equal time under similar conditions?

IX. What difficulties are often met with in determining the formulæ of minerals which do not usually occur in the determination of the formulæ of artificial compounds?

From the following percentage composition of a mineral calculate its formula:—Silica 65·37; alumina 18·87; potassium oxide 12·98; sodium oxide 2·75.

X. Describe the method for the quantitative determination of

iron by means of a solution of potassium permanganate.

0·2 gram of an ore of iron required 30 c.c. of a solution of potassium permanganate containing 3 grams of the salt in the litre before a permanent coloration was produced. What percentage of iron does the ore contain?

XI. Describe the process of manufacturing sulphuric acid from pyrites and nitrate of soda, giving equations for all the chemical changes which occur, and explaining the use of the "Glover's tower" and the "Gay-Lussac's tower." What impurities does sulphuric acid manufactured by this process contain, and how may they be removed? How are sulphuric anhydride and pyro-sulphuric acid prepared?

XII. What are the most important compounds of lead occurring in nature? Give their formulæ and crystalline forms, and state which of them serve as ores of the metal. How is lead obtained from its ores, and how is it desilverized? Give a brief description of the manufacture of red lead and white lead.

WEDNESDAY, 22ND JANUARY, 2 TO 5 P.M.

ORGANIC CHEMISTRY.

[*The first question and not more than seven other questions are to be attempted.*]

I. Required the percentage composition, observed and calculated vapor density, and molecular formula of a body which gave the following analytical results:—

1. 0·4245 gram yielded 0·5670 gram of CO_2 and 0·3025 gram of OH_2.
2. 0·1810 gram yielded 0·404 gram of AgCl.
3. Determination of vapor density by Gay-Lussac's method—

Weight of substance employed	=0·0893 gram.
Temperature of air	=8°C.
Height of barometer	=739 mm.
Temperature of vapor	=50°C.
Volume of vapor	=46·2 c.cm.
Difference of level of mercury	=140·5 mm
Coefficient of expansion of mercury for 1°C.	=0·0001815.

The weight of 1 c.cm. of dry air at 0°C and 760. mm. pressure is 0·001293 gram.

II. Give a brief account of the manner in which the following reagents act upon organic compounds:—chlorine, potash, nitric acid, sulphuric acid, and the chlorides of phosphorus.

III. What are organo-metallic bodies; by whom were they discovered; how are they prepared; and how are they used in the synthesis of organic compounds?

IV. State what you know concerning the discovery and history of the cacodyl compounds, and the theoretical interest which attaches to them.

V. Mention the earlier views held with regard to the consti-

tution of ether, and the reactions which occur in its production from alcohol and sulphuric acid. Give a description of the experiments by which Williamson placed the theory of etherification on its present basis.

VI. How are secondary and tertiary alcohols of the $C_n H_{2n+2} O$ series obtained? Explain how it was possible to predict the existence or possible formation of these bodies before they were actually prepared.

VII. Write equations, employing graphic formulæ, for the changes which occur when calcium acetate is heated by itself, with lime, with calcium formate, and with the calcium salt of a higher fatty acid, respectively.

VIII. What is meant by physical isomerism and what attempts have been made to explain it? Write the graphic formulæ of some compounds which exhibit this property.

IX. Give the graphic formulæ of all the oxybutyric acids theoretically possible, and describe how each may be synthesized.

X. How may the acids and alcohols of the acrylic series be obtained from and reconverted into corresponding bodies of the fatty series?

XI. Give a brief description of the manufacture of coal gas and the distillation of coal tar; mention the principal substances present in the former and obtained from the latter, and state to what purposes the substances obtained from coal tar are applied.

VII. Two different formulæ have been proposed for quinone. Give both formulæ and state what evidence there is in support of each.

XIII. How are salts of diazobenzene prepared? Point out the difference in the action of nitrous acid upon amido compounds of the aromatic and of other series. Describe how the following bodies may be obtained from aniline by the diazo reaction:—benzene, phenol, iodobenzene, phenol-ether, diazoamidobenzene.

XIV. Describe the process by which artifical alizarine is manufactured.

BRANCH III.

MONDAY, 20TH JANUARY, 10 A.M. TO 1 P.M.

GENERAL BIOLOGY.

I. Describe the mechanism by which the excess of moisture in a plant is got rid of.

II. Give the reasons which have led some systematists to place *Protococcus* in the vegetable kingdom, while others rank it with animals.

III. Describe in technical language the structure of the flower of a flowering plant.

IV. What is cellulose? How is it formed by the plant?

V. Describe the phenomena which gave rise to the term "free cell formation". How far is the term at variance with modern views with regard to the multiplication of cells?

VI. Give an account of the life history of some plant which exhibits a well-marked alternation of generations.

MONDAY, 20TH JANUARY, 2 TO 5 P.M.

GENERAL BIOLOGY.

I. Explain the statement that development is a process of differentiation.

II. Describe the various forms of organic movement and compare them with one another.

III. Describe the manner in which the hypoblast is formed from the fertilized ovum What tissues does it eventually give rise to?

IV. Compare the physiology of the lowest animal organisms with that of the higher.

V. What are cells?

VI. Give an account, citing examples, of all the various modes of asexual reproduction met with among animals.

BRANCH III.C.

TUESDAY, 21ST JANUARY, 10 A.M. TO 1 P.M.

ZOOLOGY.

I. Give an account of the structure and affinities of the Millepora.

II. Describe the renal organs of a crayfish, peripatus, a cockroach, a leech, and an embryonic vertebrate Which of these organs possess important structural characters in common? What are these characters?

III. Describe the more important stages in the development of a Star-fish.

IV. State what you know as to the structure and affinities of Balanoglossus.

V. Describe the Darwinian and more recent views as to the formation of the different kinds of coral reefs.

VI. Give an account of the structure, habits, and geographical distribution of *either* the Sirenia *or* the Batrachia Apoda (Gymnophiona).

TUESDAY, 21ST JANUARY, 2 TO 5 P.M.

ZOOLOGY.

I. Describe the skull of a Selachian (Elasmobranch) Give an account of the chief variations met with in Vertebrates with regard to the "jaw skeleton."

II. Describe the modifications in structure met with among Mollusca with respect to the shell, the organs which function as gills, and the foot, respectively. What is the meaning of the names Cyclobranchia and Cephalopoda? Discuss the appropriateness or otherwise of their use for the groups in question.

III. Compare a prawn, an amphipod, and a phyllopod, as regard their external characters.

IV. Give an account of the structure and mode of formation of the placenta.

V. Give an account of the structure of the Chilognathous Myriapods, illustrating your answer by reference to animals which are found in the Madras Presidency.

VI. Give an account of the reproduction of the Protozoa.

WEDNESDAY, 22ND JANUARY, 10 A.M. TO 1 P.M.

PRACTICAL ZOOLOGY.

I. Kill and dissect an earthworm in such a manner as to render visible that portion of the nervous system which lies between the 6th and the 24th segment, the spermathecæ, the testes and ciliated rosettes (seminal funnels), the ovaries and oviducts, and the prostatic glands. Remove the other organs so as to show the above mentioned structures to the best advantage. Place the flag-labels supplied, by the sides of your preparation in their proper places, and insert upon each the number of the segment in which the structure referred to occurs. Do not insert them into the worm, but place them as nearly as possible in the proper places by the side.

II. Make and fix properly focussed and illuminated under a high power of the microscope, a preparation of your own blood. You are supplied with some kerosine oil; place a sufficient quantity of this round the edge of the cover glass to prevent evaporation.

III. Three individuals, marked A, B, and C, belonging to the order Batrachia are placed before you. You are required after an examination of their external characters only, to note all the differences which you can detect, and to arrange these in your list in what you would consider the order of their importance in a classification of the group, commencing with the most important.

IV. In the second frog supplied, dissect out the fifth cranial nerve and its chief branches.

WEDNESDAY, 22ND JANUARY, 2 TO 5 P.M.

PRACTICAL ZOOLOGY.

Identification of the following:—*Spirit specimens.* Echinoderms (ophiurid, holothurian, irregular sea-urchin); Crustacea (amphipod, isopod, schizopod); Brachiopods; Cirripedes (*Balanus*); Simple Ascidians; embryo selachian; cyclostome (*Petromyzon*) Carcilian and earth-snake; Pelvic girdle of young crocodile; Rodent (mouse) and insectivore (shrew). *Dry specimens* Insects (rhynchota, orthoptera, coleoptera, hymenoptera); shells of nautilus and various gastropods in vertical section; vertebræ (cervical of bird, snake, teleostean, mammal); Boar's tusk, jaws of shark, section of horse's molar tooth, carnivore and insectivore lower jaws, tooth of

dolphin. *Microscopical preparations.* Foraminifera (shells); Hydroid colony; Hydra; Tænia (head); Parapodium of Polychaete worm; Pyrosoma (individuals from colony).

BRANCH IV.

MONDAY, 20TH JANUARY, 10 TO 11-30 A.M.

PHYSIOLOGY.

I. Criticize the leading views as to the nature of nerve energy. Is there any reason to believe that nerve energy is correlated with other forms of energy in conformity with the law of the Conservation of Energy?

II. Describe the structure of medullated and non-medullated nerve-fibres. Where is the second kind chiefly to be found? What difference in physiological and in psychological function has been suggested as resulting from the difference in structure?

III. State what you consider to be the most important differences between (1) the nervous system of vertebrated animals, (2) the brain of a mammalian and that of other vertebrated animals, (3) the brain of man and that of other mammalia.

IV. State very briefly your opinions of the methods pursued and the conclusions arrived at by Phrenology in its attempts to localize distinct functions in different parts of the brain. Discuss the reliability of inferences as to the localization of functions in the human brain drawn from experiments on and observations of the brains of the lower animals.

V. Describe (without entering into details) the structure of the ear. Distinguish between the pitch, the loudness, and the volume of a sound.

VI. What are meant by the "Sensory Circles" or "Sensation Areas" of the skin? In what part of the body are those areas largest and in what part smallest? How would you explain the fact that the areas are smaller in the blind than in those who see?

MONDAY, 20TH JANUARY, 11-35 A.M. TO 1-5 P.M.

DEDUCTIVE LOGIC.

I. Discuss briefly the question whether the proper province of Logic is *formal* truth only, or *material* truth only, or whether it should include both. Is there any kind of truth which unquestionably lies outside the province of Logic?

II. Define the question that is discussed under the designation of *the import of proposition.* State the chief views that are held on that question, and indicate, with reasons, those you reject.

III. State and exemplify the logical uses of the Second and Third Figures, respectively. Give the history of the origin of the Fourth Figure, and state for what various reasons that Figure is rejected by some logicians.

IV. State the principle on which *Reductio per impossibile* proceeds

Why was that mode of reduction adopted in the cases of *Baroko* and *Bokardo?* Reduce either of these moods to the other, directly.

V. It is maintained by some that syllogising is not real inference. What, then, in the view of these, is real inference and what is the nature of syllogising?

VI. 1. Explain and illustrate the statement: "We must reject the claims that have been put forward in behalf of the syllogism to be the exclusive form of deductive reasoning."

2. Criticise the following statement: "Every conditional proposition may be regarded as a Universal Affirmative."

VII. Compare the methods of Logical Notation adopted by Euler, Lambert, and Hamilton, respectively, and estimate their respective merits.

MONDAY, 20TH JANUARY, 2 TO 5 P.M.

INDUCTIVE LOGIC.

I. Define Induction and distinguish it from Deduction. What according to Mill and Bain is the ground of all Induction?

Comment on the following passage from Jevons:—"In inductive as in deductive reasoning the conclusion never passes beyond the premises."

II. In the expression "Law of Nature" what does the term Law denote? Into how many distinct kinds may the Laws of Nature be classified? Give an example of each kind. With which of the kinds is Induction chiefly concerned, and why?

III. It is objected to Mill's theory of Induction that he considers the ground of all Induction as itself an Induction. Explain clearly how this objection is met.

IV. State the canon of the method of Concomitant Variations, and the axiom on which the canon is based. Bain says that the method is powerful in suggesting as well as efficacious in proving causal connection. Exemplify. Why can we not always reason from a few steps in a series to the whole series?

V. What are the three kinds of explanation of Laws of Nature? Exemplify each kind. Is there any limit to the scientific explanation of phenomena?

VI. What is meant by elimination by the computation of chance? Exemplify its application.

VII. Point out the various uses of hypotheses, giving examples.

VIII. Considered as a process, Definition is said to be either Inductive or Deductive. Give an example to illustrate each kind. What according to Mill are the requisites of a Philosophical Language?

IX. What is classification; and how is it related to Logical Division? How is classification an operation subsidiary to Induction? Explain and exemplify the distinction between a Natural and an Artificial classification. What is the aim of a Natural classification.

X. Do you consider it necessary to set apart a separate chapter in Logic for the treatment of fallacies? Give Mill's classification of fallacies.

TUESDAY, 21ST JANUARY, 10 A.M. TO 1 P.M.

PSYCHOLOGY.

I. State briefly what you consider to be the province and main divisions of Psychology. What objections are brought against the introspective study of mind and show how these objections can be met.

II. What is meant by the *Absolute Sensibility* and the *Discriminative Sensibility* of an organ? Enunciate Fechner's Law and give one or two examples illustrating the law.

III. "Perception involves classification." Explain. Distinguish between Sensation and Perception and discuss Hamilton's law connecting the two.

IV. How far are we able to appreciate Solidity and Distance by the eye? What part does Muscular Sensibility play in the perception of Solidity and Distance?

V. Give a psychological analysis of what you take to be the mental process involved in poetical composition and scientific discovery, respectively.

VI. 1. Explain fully the co-operation of the Will in the process of reproduction.

2. Point out the elements common to both memory and expectation and those peculiar to each.

VII. State the attempts that have been made to reduce pleasures and pains to a single principle, physiological or psychological. Criticize any one of them.

VIII. How far has the attempt to classify emotions, according to the degree of intellectual activity involved in them, proved successful?

Analyse the feelings aroused in the mind by the contemplation of beautiful mountain scenery.

IX. Explain the phenomenon of sleep. Distinguish between an Illusion and a Hallucination. Give Examples of Illusions of Perception so as to exemplify their sources.

X. Give an analysis of the process of Deliberation.

Examine the grounds on which the existence of the Will as a distinct faculty has been disputed.

TUESDAY, 21ST JANUARY, 2 TO 5 P.M.

PSYCHOLOGY.

I. 1. State the principle that characterises the Associational Psychology and that has made it a revolutionary force in mental science.

2. Name any of Hartley's predecessors in whom the first beginnings of this psychological method may be seen, and any of his contemporaries or successors (prior to James Mill) who contributed to its development, pointing out in what ways they did so.

II. Describe briefly the physical hypothesis on which Hartley based his psychological doctrine. Point out how it was an improvement on previous attempts in the same direction, and how it has been superseded by the advance in physiological knowledge.

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III. How did J. Mill attempt to unify the received laws of Association? What other laws of association did he discover or emphasise?

IV. How did J. Mill distinguish between Desire, Motive, and Volition, as products of Association?

V. State fully and criticise any one of the following:—J. Mill's theory of (1) Belief, (2) Beauty, (3) Moral Sentiment.

VI. Examine in what way the hypothesis of Evolution has modified the Associational psychology.

VII. Of the cosmological theories, selecting Natural Realism, Hypothetical Realism, and Idealism, point out what you regard as the strongest objection to each, examining whether it is conclusive or not.

VIII. On the supposition that extension is not an intuitive perception of any sense, how does J. S. Mill or how does Dr. Bain explain the process of its acquirement?

IX. Examine whether Leibnitz's addition to the epitome of the Sensational psychology, *viz.*, *nisi intellectus ipse*, is a mere unmeaning addition to, or a real modification thereof, and accurately expresses the work that it remained for Kant to do.

X. Hamilton, on one principle, and J. S. Mill, on another, maintained that *the inconceivable is not necessarily the untrue*. Explain; and point out a practical application made by Hamilton of this conclusion.

WEDNESDAY, 22ND JANUARY, 10 A.M. TO 1 P.M.

THEORY OF ETHICS.

I. What difference is noticeable between the ancient and modern ways of treating ethics? How do you account for the difference?

II. Explain the different logical methods adopted in Ethics.

State the principal varieties of the intuitive methods in modern ethical systems, remarking on the special characteristics of each.

III. On what grounds has conscience as an original power been disputed? Are the objections valid? What part does Reason play in the exercise of the Moral Faculty?

IV. In the exercise of the moral judgment what is it that is declared to be right or wrong?

V. "No reason can be given why the general happiness is desirable except that each person, so far as he believes it to be attainable, desires his own happiness." Will you accept this as a proof of Utilitarianism?

VI. Is the discussion of the question of Free Will a necessary part of ethical enquiry? How does the doctrine of inherited moral dispositions affect the view of moral responsibility?

VII. Explain the nature of Casuistry and show whether Intuitionalism or Utilitarianism solves these questions more satisfactorily

WEDNESDAY, 22ND JANUARY, 2 TO 5 P.M.

HISTORY OF ETHICS.

I. It is said that the common characteristic of the ethical speculation of the earlier period of the 18th Century in England was oppo-

sition to the doctrine of Hobbes. What principle of Hobbism was assailed by the writers of the Moral Sense school of Ethics; and in what respects did these moralists regard the teachings of the Rational School to be defective?

II. The moral theory both of Shaftesbury and Butler starts from the idea of an economy or a system. Have both of them the same 'economy' in view? How far would it be a correct representation of Shaftesbury's theory to say (as Price says) that it degrades the apprehension of Right into a *relish?* How does Shaftesbury distinguish between merit and virtue?

III. How does Butler's "conscience" differ from the "moral sense" of Hutchison? What according to Butler are the component elements of Human nature?

IV. When in any particular case the dictates of conscience and self love appear to be opposed, how does Butler decide which should prevail; and how when self love appears to conflict with benevolence?

Barratt asks: "How is it consistent with Butler's profession of aiming at the end of our whole nature, to substitute for that, the despotism of one single part of it?" What would be Butler's reply?

V. How does Brown's theory of the moral sense differ from the theories of Shaftesbury and Hutchison, and what objection has he to ascribing our approbation of virtue to its beneficial consequences?

VI. Briefly indicate the attitude of Hume and Adam Smith to the Moral Sense theory of Ethics.

VII. Estimate the Moral Sense theory from the stand point of modern Evolutionism.

VIII. What definite answers have been given to each of the following questions by representatives of the Moral Sense School? (1.) Whether the moral sense determines the rightness of particular acts or the rightness of general rules; (2.) Whether or not the Religious sanction should be recognised as a necessary part of the ethical system; (3.) Whether the objects of moral approbation are actions or dispositions; (4.) Whether the moral faculty is of the nature of a feeling or partakes also of the nature of a judgment; (5.) Whether the moral sense is capable of cultivation.

IX. Which of the philosophers of the Moral Sense school were optimistic and which pessimistic in their tendencies? Support your answers.

BRANCH V.

MONDAY, 20TH JANUARY, 10 A.M. TO 1 P.M.

ETHNOLOGY AND COMPARATIVE PHILOLOGY.

I. Show briefly that while phonology and etymology are of the utmost importance in Comparative Philology, neither of them is sufficient in itself. Illustrate your answer.

II. Write out a scheme showing the physiological plan on which the English spoken language is arranged.

III. Give arguments in support of the theory that the Indo-Euro-

pean languages are descended from an original monosyllabic tongue.

IV. Give reasons in support of the onomatopoetic origin of language and show wherein it is defective.

V. 1. Show that adverbs were originally case endings.

2. For what purposes were prepositions originally used?

3. For what purposes is re-duplication used?

VI. Show by illustrations that the weight of the brain as compared to the total weight of the body is no true index of the nature and power of a man.

VII. Into what three classes are skulls divided by measurement by facial angle? Mention races as types of each class.

VIII. Mention *two* theories that have been put forth to account for the varieties of colours of the skin in the human race Show that the colour does not depend on mere altitude or latitude.

IX. 1. Explain how the art of making pottery most probably took its rise.

2. Trace the gradual development of the bow from the spring-trap to the cross-bow.

MONDAY, 20TH JANUARY, 2 TO 5 P.M.

ANCIENT AND ENGLISH INSTITUTIONS.

[*Nine questions only are to be attempted.*]

I. Define *legal fiction* in the sense in which the Roman lawyers used the term, and in the broader sense in which it is used by Maine

Both the Roman *responsa prudentum* and English *case law* are examples of legal fiction. How so? Compare these two agencies as methods of legal development.

II. What was the origin of the theory of Natural Law? Point out its influence on the growth of Roman Law, and trace briefly its historical connection with International Law

III. "Ancient law subordinates the woman to her blood relations, while a prime phenomenon of modern jurisprudence has been her subordination to her husband." Trace, as concisely as possible, the history of the change.

IV. 1. Describe the organization of the ancient Irish tribe.

2. What classes of institutions are to be traced respectively to (*a*) the ancient tribe and (*b*) the tribal chief?

V. Describe the four-fold division of the Irish family according to the Book of Aicill. Criticise Maine's explanation of it.

VI. How does Maine account for the origin of primogeniture?

VII Von Maurer holds that "the primitive Teutonic proprietary system had everywhere a tendency to modify itself in the direction of feudalism." How was this tendency shown? To what extent is the same tendencey discoverable in India?

VIII. Give a brief account of the origin and constitution of the principal Indian Law Courts. How has the introduction of English law and procedure produced "a revolution in the legal ideas of the country?"

IX. What vestiges still exist in England of the common ownership of the early village community?

X. 1. Describe the English judicial system at the time of the Conquest.

2. What motives led William to strengthen the inferior courts?

3. Trace briefly the decay of private jurisdictions.

XI. What is meant by Privilege of Parliament? Describe the principal contests that have arisen respecting it.

XII. Give a brief summary of the legislation during the present century affecting the English military system.

TUESDAY, 21ST JANUARY, 10 A.M. TO 1 P.M.

HISTORY OF THE MIDDLE AGES.

[*Only nine questions are to be attempted.*]

I. What influences were at work during the second and third centuries tending to obliterate national distinctions within the Roman Empire? How did this process of assimilation affect the relations of Rome itself to the Empire?

II. 1. Draw a sketch of Constantinople and its surroundings, give a brief description of the city, and justify Gibbon's remark that its position 'appears to have been formed by nature for the centre and capital of a great monarchy'.

2. Enumerate the principal sieges it sustained, giving in each case the date, the name of the besieging party, and the result.

III. 1. What, under the Roman Republic, were *Leges*, *Plebiscita*, *Senatûs Consulta*?

2. What was the 'Edict of the Prætor', and how did it become an important source of Roman Law?

3. Describe the system of codification of the law which took place under the directions of Justinian?

IV. Enumerate the various barbarian invasions of Italy between 300 and 600 A.D., giving the dates and the most important names and incidents connected with each.

V. What were the chief causes of the rapid decay of the City of Rome from the 5th century? Give brief notices of (1) Arnold of Brescia, (2) the tribune Rienzi, and (3) Stephen Porcara, indicating particularly the share taken by each in the political history of the people.

VI. What is the difference between the *Sunnis* and the *Shias*? Describe the historical events which gave rise to this difference.

VII. Give an account of the public life of Pope Leo III. On what ostensible grounds did he claim the right to nominate Charlemagne as Emperor? What claims to this right were advanced at a later period, owing to the indefiniteness and uncertainty of these grounds?

VIII. Draw a map of so much of the continent of Europe, excluding islands, as lies west of a line drawn from the Adriatic to the Baltic, showing the territorial divisions as they existed after the treaty of Verdun; and marking the rivers, *Po*, *Rhine*, *Rhone*, *Seine*, *Loire*, and *Tagus*, and the towns, *Aachen*, *Verdun*, *Tours*, *Laon*, *Leon*, *Granada*, *Genoa*, and *Milan*.

IX. Explain the mediæval idea of a visible Catholic Church. State the historical and theoretical bases of the idea, and indicate briefly how the conception of the Holy Roman Empire was developed from it.

X. Describe the position in Europe and the relation to their subjects of the Hohenstaufen (1) as Emperors, (2) as feudal kings.

XI. Gibbon says, "The public reason of the Roman Law has been silently or studiously transferred into the domestic institutions of Europe." Explain this statement and illustrate it from the history of the middle ages.

XII. Give a general account of the conquests of Zingis Khan and his successors, particularly in Europe; and, in connection therewith, trace the origin of the Ottoman dynasty.

TUESDAY, 21ST JANUARY, 2 TO 5 P.M.

MODERN HISTORY AND HISTORY OF GREAT BRITAIN.

[*Not more than nine questions are to be attempted, of which at least four must be from the last six.*]

1. Describe and compare the methods of government of Charles I. in 1634, Cromwell in 1655, and Walpole in 1733.

II. Sketch the party history of the reigns of William III. and Mary and of Anne. What advance was made in these reigns towards the modern system of party government?

III. What legal and constitutional points were raised by incidents in the career of John Wilkes? Estimate the importance of their discussion and decision.

IV. Bright says that in 1793 the ministers found themselves released from their difficulties by the French declaration of war. Fully explain this.

V. Describe the circumstances in which Great Britain interfered in the affairs of the Netherlands in 1830 and in Danish affairs in 1850.

VI. Give the dates and briefly indicate the circumstances of the acquisition of each of the chief portions of the British colonial empire.

VII. What were the provisions of the treaties of Münster and Osnabrück which affected the political organization of the Empire? Show that their general effect was to lessen the power of the Empire.

VIII. Describe the two principal military exploits of the Great Elector and the circumstances which led to their being undertaken.

IX. On what grounds did Louis XIV. attack Spain in 1667? What circumstances led him to consent to a peace which left the original dispute undecided?

X. Show that the attack of Louis XIV. on Holland in 1672 was in some sort a revival of the religious wars of the 16th century.

XI. Explain the origin of the Cossacks and state generally the cause of the Cossack wars between Russian and Poland.

XII. Draw a map showing the territories of the Northern and

Eastern powers, also the position of Courland, Livonia, Lithuania, and Transylvania, and of the rivers Danube, Dneiper, Dneister, Pruth, and Don.

WEDNESDAY, 22ND JANUARY, 10 A.M. TO 1 P.M.

ESSAY.

Write an essay on any one of the following subjects :—

1. The position in Europe of the German Empire of to-day as compared with the Mediæval Empire in the time of the Hohenstaufen.
2. The advantages of an Absolute Government.
3. The causes of French Ascendency in the latter half of the 17th century.
4. The Historical Method in Jurisprudence.

WEDNESDAY, 22ND JANUARY, 2 TO 5 P.M.

POLITICAL ECONOMY.

I. Give Fawcett's definition of capital, and state, together with reasons for your opinion, whether you consider it correct or not.

II. "A demand for commodities is not a demand for labour." Explain clearly what this means and show that it is not universally true.

III. "The margin of cultivation depends upon the rate of profit in each country." Examine this statement.

IV. How does an increase in the population of a country affect (1) rents, (2) wages?

V. Examine the statement that the rate of profits depends upon wages. How is this principle stated by Mill?

VI. "If rents rise the price of agricultural produce must rise." "The price of agricultural produce is not affected by the payment of rent." Are these two statements contradictory, or can you reconcile them?

VII. In some countries having a paper currency a silver or gold coin will exchange for much more than its nominal value in paper. How does this state of things arise, and what effect would it have on the rate of interest?

VIII. What would be the economic effects of a refusal of the Government of India to pay pensions to persons not resident in this country?

IX. Under what circumstances do you consider that a Government would be justified in raising a revenue (1) by a tax on exports, (2) by a protective duty on imports?

X. Discuss the eventual incidence of the following taxes and show how far they conform or fail to conform to Adam Smith's canons of taxations :—(1) an income tax, (2) a tax on occupied houses, (3) legacy duties, (4) tolls, (5) a tax on salt.

M.A. DEGREE EXAMINATION, 1890.

BRANCH I.

MONDAY, 20TH JANUARY, 10 A.M. TO 1 P.M.

ALGEBRA AND TRIGONOMETRY.

I. Find the sum of the rth powers of the first n natural numbers. If S_r represent this sum, $S_7 + S_5 = (n^2 + n)^4/8$.

II. Show that the continued fraction $\frac{b_1}{a_1 +} \frac{b_2}{a_2 +} \frac{b_3}{a_3 +} \ldots$ has a definite value if the limit, when n is infinite, of $a_n a_{n+1} / b_{n+1}$ is greater than zero.

Prove that $\frac{1}{2} + \frac{2}{3} + \frac{4}{5} + \frac{6}{7} + \ldots = 1 - \sqrt{\frac{1}{e}}$.

III. The solution in positive integers of the equation $ax^2 + 2hxy + by^2 + 2gx + 2fy + c = 0$ can be made to depend on the solution of an equation of the form $x^2 \pm my^2 = \pm n$.

Find the general values of x and y which will make $x^2 + xy + y^2$ a perfect square.

IV. If $a, b, c, \ldots$ be prime numbers and $\phi(n)$ represent the number of integers less than n and prime to it, then $\phi(abc \ldots) = \phi(a) . \phi(b) . \phi(c) \ldots$

If n and $2^n - 1$ be both prime numbers, shew that $2^{2n-1} - 2^{n-1}$ is a perfect number; *i.e.* it is equal to the sum of all its divisors including unity.

V. Eliminate x from the equations $ax^3 + 3bx^2 + 3cx + d = 0$; $axy + b(x + y) + c = 0$; and express the roots of the resulting equation in y in terms of the roots of the given equation in x.

VI. The quartic $x^4 + 2ax^2 + 4bx + c = 0$, will have equal roots if $c(a^2 - c)^2 = b^2(27b^2 - 18ac + 2a^3)$.

Solve completely $4x^4 - 35x^3 + 51x - 18 = 0$.

VII. If $\alpha = \frac{2\pi}{17}$, prove that $\cos\alpha + \cos 2\alpha + \cos 4\alpha + \cos 8\alpha$, and $\cos 3\alpha + \cos 5\alpha + \cos 6\alpha + \cos 7\alpha$ are the roots of the quadratic $x^2 + \frac{x}{2} - 1 = 0$.

VIII. Prove that, if $x < 1$,

$$\frac{x \cos\theta}{1 - 2x \sin\theta + x^2} = x\cos\theta + x^2 \sin 2\theta - x^3 \cos 3\theta - x^4 \sin 4\theta + \ldots$$

Hence deduce the expansion of $\sin 2n\theta \sec\theta$ in powers of $\sin\theta$.

IX. Write down the values of $\sin\theta$ and $\cos\theta$ as the product of an infinite number of factors and prove that $\sin\frac{\pi x}{4} + \cos\frac{\pi x}{4} = (1 + x)\left(1 - \frac{x}{3}\right)\left(1 - \frac{x}{5}\right) \ldots$

Hence shew that $\frac{\pi^3}{32} = \frac{1}{1^3} - \frac{1}{3^3} + \frac{1}{5^3} - \frac{1}{7^3} + \ldots$

X. In any spherical triangle $A\,B\,C$, prove that

$$\cos\frac{A+B}{2}\cos\frac{c}{2} = \cos\frac{a+b}{2}\cos\frac{C}{2};$$

$$\cos S \operatorname{cosec} A + \sin\frac{b}{2}\sin\frac{c}{2}\sec\frac{a}{2} = 0.$$

How is this formula useful in finding the area of a spherical triangle?

XI. Find the volume of a pyramid in terms of its six edges.

If a regular octahedron and a cube be inscribed in the same sphère, their volumes will be to one another as 2 to $\sqrt{3}$.

MONDAY, 20TH JANUARY, 2 TO 5 P.M.

CO-ORDINATE GEOMETRY.

I. Find the condition that $la + m\beta + n\gamma = 0$, $l'a + m'\beta + n'\gamma = 0$, shall be at right angles to each other. Prove that $a \cos A + \beta \cos B + \gamma \cos C = 0$ is the equation of a line perpendicular to the line joining the orthocentre and the centroid.

II. Find the co-ordinates of the centres of similitude of the circles $x^2 + y^2 + 2gx + 2fy + c = 0$, and $x^2 + y^2 + 2g'x + 2f'y + c' = 0$.

If a variable circle touch two fixed circles, the chord of contact passes through one of the centres of similitude of the two fixed circles.

III. Determine the form of the general equation to a conic section when the axes are tangents.

Find the co-ordinates of the focus of the parabola whose equation when referred to two tangents inclined at an angle ω is

$$\sqrt{\frac{x}{a}} + \sqrt{\frac{y}{b}} = 1.$$

IV. Investigate the equation to the tangent at any point of the curve whose equation is $A\sqrt{u} + B\sqrt{v} + C\sqrt{w} = 0$.

Thence deduce the condition that the straight line $\lambda u + \mu v + \gamma w = 0$ may touch the curve.

V. Find the equation of the chord joining the points $\theta = \alpha - \beta$ and $\theta = \alpha + \beta$ of the conic $\frac{l}{r} = 1 + e\cos\theta$.

PP', QQ' are two chords of a conic such that the lines joining the focus S to their poles are at right angles; if the angles PSP', QSQ' be constant, shew that the locus of the point of intersection of PP', QQ' is a pair of conics each having S for focus.

VI. Find the condition that $ax^2 + by^2 + cz^2 + 2a'yz + 2b'zx + 2c'xy = 0$ may represent a pair of planes, and supposing it satisfied, if θ be the angle between the planes, prove that

$$\tan\theta = \frac{2\sqrt{a'^2 + b'^2 + c'^2 - bc - ca - ab}}{a + b + c}$$

VII. Find the equations of the principal planes of a conicoid. Take as an example the conicoid whose equation is $11x^2+10y^2+6z^2-8yz+4zx-12xy=1$.

VIII. Investigate the conditions that the surface represented by the general equation of the second degree may be a surface of revolution. Shew that $3z^2-6yz-6zx-7x-5y+6z+3=0$ represents an hyperbolic paraboloid.

IX. Find the equation of the tangent cone from any point to an ellipsoid, and also the condition that the enveloping cone may have three perpendicular generators.

X. Find the equation of the developable surface whose generating lines pass through the two curves $y^2=4ax$, $z=0$ and $x^2=4ay$, $z=c$, and shew that its edge of regression is given by $cx^2-3axz=0=cy^2-3ax(c-z)$.

XI. Find the radius of curvature of any oblique section of a surface.

Prove that the measure of curvature at every point of the elliptic paraboloid $2z=\frac{x^2}{a}+\frac{y^2}{b}$ where it is cut by the cylinder $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$ is equal to $\frac{1}{4ab}$.

TUESDAY, 21ST JANUARY, 10 A.M. TO 1 P.M.

NEWTON AND DIFFERENTIAL CALCULUS.

I. State and prove Lemma I.

In the side AB and in AC produced of a triangle ABC points B' and C' are taken such that $AB+AC=AB'+AC'$, and $B'C'$ intersects BC in D. Find the limit of the ratio $BD:CD$ when $B'C'$ coincides with BC.

II. State and prove Lemma VII.

Draw four figures illustrating the approach of the construction to its ultimate form. If TP and TQ be tangents at P and Q to a curve, shew that when Q approaches P and ultimately coincides with it, the ultimate ratio of $TP:TQ$ is one of equality.

III. State and prove Prop. VI.

Find the law of force directed towards the pole under which a particle will describe an equiangular spiral.

IV. A body is projected from the point P with velocity V and moves under the action of a force μD^{-2} directed to a point S; establish criteria for determining whether the orbit is an ellipse, hyperbola, or parabola. Prove that if a body be projected from the earth with a velocity exceeding 7 miles per second it will not return to the earth.

V. Differentiate with regard to x the expressions:—

(i.) $\sqrt{\log(\sin x)}$ (ii.) $\tan^{-1}\sqrt{\frac{1-x}{1+x}}$ (iii.) $\log\frac{(1+2x^2)^{\frac{1}{2}}+2x}{(1-2x^2)^{\frac{1}{2}}}$

(iv.) $x^{\log(\sin x)^x}$.

VI. Using D for the operator $\frac{d}{dx}$ explain the difference between $(xD)^n x^r$, $(Dx)^n x^r$ and $(D^n x^n) x^r$, and evaluate each.

Shew that $(D^n x^n)\left(\frac{1}{1-x}\right) = \lfloor n \, (1-x)^{-(n+1)}$

and that $x\,(Dx)^n \left(\frac{1}{1-x}\right) = (xD)^n \left(\frac{1}{1-x}\right)$.

VII. If $\phi(a)=0$ and $\psi(a)=0$, shew how to find the value of $\frac{\phi(x)}{\psi(x)}$ when $x=a$.

Evaluate $\dfrac{1-\frac{x^2}{2}-\cos x}{\log(\cos x^2)}$ when $x=0$.

and $\dfrac{x\,(ae^{bx}-be^{ax})}{e^{\frac{ax}{b}}-e^{\frac{bx}{a}}}$ (i.) when $x=0$, (ii.) when $x=a=b$.

VIII Explain the difference between partial and total differentiation.

If z be a function of x and y, and if $u=\phi(x,y)$, $v=\psi(x,y)$, then x and y may be expressed as functions of u and v. On this supposition, find $\frac{dz}{du}$, $\frac{dz}{dv}$, and $\frac{d^2z}{dudv}$, in terms of the partial differential coefficients of z with regard to x and y.

In the equation

$$x^2\frac{d^2z}{dx^2}+2xy\frac{d^2z}{dxdy}+y^2\frac{d^2z}{dy^2}=(m+n-1)\left(x\frac{dz}{dx}+y\frac{dz}{dy}\right)-mnz$$

change the independent variables to u and v where $u=x$ and $y=vx$.

If u and v be functions of x and y, prove that

$$\begin{vmatrix} \frac{du}{dx} & \frac{du}{dy} \\ \frac{dv}{dx} & \frac{dv}{dy} \end{vmatrix} \times \begin{vmatrix} \frac{dx}{du} & \frac{dx}{dv} \\ \frac{dy}{du} & \frac{dy}{dv} \end{vmatrix} = 1.$$

IX. Shew how to find the point of intersection of two consecutive curves of the family $\phi(x,y,c)=0$ and prove that in general the locus of this point touches each of the family.

What other curves may be expected in the equation of the locus in addition to the true envelope?

X. If ρ and R be the radii of curvature of the curve $\phi(x,y,c)=0$ and the envelope at their point of contact, shew that

$$\frac{1}{R}-\frac{1}{\rho}=\frac{\left(\frac{d^2\phi}{dxdc}\right)^2\left(\frac{d\phi}{dy}\right)^2-2\frac{d^2\phi}{dxdc}\frac{d^2\phi}{dydc}\frac{d\phi}{dx}\frac{d\phi}{dy}+\left(\frac{d^2\phi}{dydc}\right)^2\left(\frac{d\phi}{dx}\right)^2}{\left\{\left(\frac{d\phi}{dx}\right)^2+\left(\frac{d\phi}{dy}\right)^2\right\}^{\frac{3}{2}}\frac{d^2\phi}{dc^2}}$$

XI. Define the asymptote of a curve, and prove from your definition that if the equation of the curve can be put in the form

$y = \mu x + \nu + \frac{a_1}{x} + \frac{a_2}{x^2} + \ldots$, the line $y = \mu x + \nu$ is an asymptote.

Find the asymptotes, linear and parabolic, of the curve $x^2(x+y) = x^3 + y^3$, shew the position of the branches, and trace completely the curve.

TUESDAY, 21ST JANUARY, 2 TO 5 P.M.

INTEGRAL CALCULUS AND DIFFERENTIAL EQUATIONS.

I. Obtain the following:—

$$\int \frac{dx}{\sqrt{\{(a-x)(\beta-x)\}}}, \int \frac{(\lambda+\mu x)dx}{\{(x-a)(x-\beta)\}^{\frac{3}{2}}}, \text{ and}$$

$$\int \frac{dx}{(x-a)^2(x-\beta)^3}.$$

II. Find a formula of reduction for the integral $\int \cos ax\,(\sin x)^n dx$.

Shew that

$$\int x^2 e^{ax} \cos bx\, dx = \frac{e^{ax}}{c^3}\left\{ c^2x^2 \cos(bx-\lambda) - 2cx \cos(bx-2\lambda) + 2\cos(bx-3\lambda)\right\}, \text{ where } a = c\cos\lambda,\ b = c\sin\lambda.$$

III Prove the following:—

$$\int_b^a f(x)dx = \int_b^a f(a+b-x)dx.$$

$$\int_0^a f(x)dx = 2\int_0^{\frac{a}{2}} f(x)dx, \text{ if } f(a-x) = f(x).$$

$$\Gamma(n+1) = n\Gamma(n).$$

$$\Gamma(n)\Gamma(n+\tfrac{1}{2}) = \frac{\sqrt{\pi}}{2^{2n-1}}\Gamma(2n).$$

IV. Prove that $\int_0^\infty e^{-x}dx = \frac{\sqrt{\pi}}{2}$, and thence deduce that $\Gamma(n+\frac{1}{2}) = \frac{1.3.5\ldots(2n-1)}{2^n}.\sqrt{\ }$.

V. Establish the following results:—

$$\int_b^a \sqrt{(a-x)(x-b)}\,dx = \frac{\pi}{8}(a-b)^2.$$

$$\int_0^\pi \frac{\theta \sin\theta\, d\theta}{1+c^2\cos^2\theta} = \frac{1}{c}\pi \tan^{-1}c.$$

$$\int_0^1 \frac{\log\frac{1}{x}\, dx}{1-x} = \frac{\pi^2}{6}.$$

VI. If S is the area of the portion of a curve symmetrical with regard to the axis of x, bounded by the ordinates $x=a$, $x=b$, show that $S=2\int_b^a y\,dx$.

Shew that the area bounded by the arc of an hyperbola, the transverse axis and a central radius vector may be expressed in terms of a logarithm.

Shew that the area between the curve $x(x^2+y^2)=ay^2+bx^2$, and its asymptote $x-a=0$, is $\frac{\pi(a-b)(3a+b)}{4}$, where $a>b$.

VII. Shew that in a plane curve $s=\int\sqrt{r^2+\left(\frac{dr}{d\theta}\right)^2}\,d\theta$.

Prove that an arc of the curve $r=a\sin n\theta$ is equal in length to that of an ellipse whose semi-axes are a, na.

VIII. Transform $\int_0^c\int_0^x V\,dx\,dy$, having given $x=au+bv$, $y=bu+av$, a being greater than b.

IX. Shew that $\frac{dM}{dy}=\frac{dN}{dx}$ is the one necessary and sufficient condition under which the first member of the equation $Mdx+Ndy=0$ is an exact differential.

Prove that the equation $Mdx+Ndy=0$ when homogeneous is made integrable by the factor $\frac{1}{Mx+Ny}$, unless $Mx+Ny$ is identically equal to 0, in which case $\frac{1}{Mx-Ny}$ is an integrating factor.

Can $(y-3x^2y^2-2x^3)dx+(2y^3+3x^3y^2-x)dy=0$ have an integrating factor which is a function of x^2+y? If so, find the factor and integrate the equation.

X. Solve the following equations:—

$$x+y\frac{dy}{dx}=a\sqrt{1+\left(\frac{dy}{dx}\right)^2}.$$

$$y-2x\frac{dy}{dx}=f\left\{x\left(\frac{dy}{dx}\right)^2\right\}.$$

XI. How may a singular solution of a differential equation of the first order be deduced from its complete primitive?

Find the singular solution of $x+y\frac{dy}{dx}=\frac{dy}{dx}\sqrt{x^2+y^2-a^2}$

XII. Solve the following equations:—

$$\frac{d^2y}{dx^2}-2\frac{dy}{dx}+y=e^x;$$

$$\frac{x^4d^2y}{dx^2}=\left(y-x\frac{dy}{dx}\right)^3.$$

WEDNESDAY, 22ND JANUARY, 10 A.M. TO 1 P.M.

ADDITIONAL PAPER ON PURE MATHEMATICS.

I. Shew that $\tan(a_1 + a_2 + a_3 + \ldots a_n) = \dfrac{s_1 - s_3 + s_5 - \ldots}{1 - s_2 + s_4 - \ldots}$, where s_r is the sum of the products of $\tan a_1 \tan a_2, \ldots \tan a_n$, taken r at a time.

Hence prove that

$$n \cot na = \cot a + \cot\left(a + \frac{\pi}{n}\right) + \cot\left(a + \frac{2\pi}{n}\right) + \ldots + \cot\left(a + \frac{n-1}{n}\pi\right)$$

II. Prove that the equation of a conic inscribed in a triangle can be put in the form $\sqrt{\lambda\alpha} + \sqrt{\mu\beta} + \sqrt{\nu\gamma} = 0$. Shew that if the minor axis of this conic is a constant $2b$, the locus of the foci is $\alpha\beta\gamma(a\alpha + b\beta + c\gamma) = b^2(\alpha\beta\gamma + b\gamma\alpha + c\alpha\beta)$

III. If u_2 and u_3 be respectively the arithmetic means of the squares and cubes of all numbers less than n and prime to it, unity being included, prove that

$$n^3 - 6nu_2 + 4u_3 = 0$$

IV. Shew that through any point (x, y, z) there can be drawn three confocals to the quadric $\dfrac{x^2}{a^2} + \dfrac{y^2}{b^2} + \dfrac{z^2}{c^2} = 1$; and prove that if $a^2 + \lambda$, $a^2 + \mu$, $a^2 + \nu$ be the squares of the semi major axes of the confocals, $x^2 = \dfrac{(a^2 + \lambda)(a^2 + \mu)(a^2 + \nu)}{(a^2 - b^2)(a^2 - c^2)}$, with similar values for y^2 and z^2.

Considering λ, μ, ν, as coordinates determining the point (x, y, z), shew that the equation of the director sphere of the quadric $\lambda = u$, where u is a constant, is $\lambda + \mu + \nu = 3u$. What does the equation $\lambda\mu\nu = k$ represent?

V. Establish the formula $\frac{1}{2}\int(xdy - ydx)$ for the area of a curve.

Find the area of the loop of the curve $x^3 + y^3 = 3axy$

Find also the area included between the curve and its asymptote, the loop being excluded.

VI. Express the radius of curvature of a plane curve and the coordinates of the centre of curvature at a point (x, y) on the curve in terms of x and y. Find the radius of curvature at any point on the curve whose equation is $y + \sqrt{a^2 - x^2} = a \log \dfrac{a + \sqrt{a^2 - x^2}}{x}$, and give a geometrical construction for the centre of curvature.

VII. Prove that the equation in areal coordinates of the minimum ellipse described about a triangle is $yz + zx + xy = 0$, and that its area is $\dfrac{4\pi\Delta}{\sqrt{27}}$ where Δ is the area of the triangle.

VIII. Give a particular integral of the linear equation $\frac{d^2y}{dx^2} + P\frac{dy}{dx} + Qy = O$, shew how to find the complete solution of the equation $\frac{d^2y}{dx^2} + P\frac{dy}{dx} + Qy = R$, P, Q, and R being functions of x.

Solve the equations

$$(1) \quad (x^2 + c^2)\frac{d^2y}{dx^2} = 6y$$

$$(2) \quad \frac{d^2y}{dx^2} + 4y = \sin 2x$$

IX. Establish Charpit's methed of solving the differential equation $f\left(x, y, z, \frac{dz}{dx}, \frac{dz}{dy}\right) = 0$. Solve the equation $\left(\frac{dz}{dx}\right)^2 + \left(\frac{dz}{dy}\right)^2 = 2xy$.

X. If a curve roll on a straight line find the radius of curvature of a carried straight line.

A cycloid rolls on a straight line. Prove that the envelope of its base is the curve given by the equation $(x^2 + y^2 - 16a^2)^3 + 108a^2y^4 = 0$, the fixed line being the axis of x and the origin the point of contact of the vertex of the cycloid with the fixed line.

XI. Prove that

$$\int_{-1}^{1} \frac{dx}{\sqrt{1-2ax+a^2}\,\sqrt{1-2bx+b^2}} = \frac{1}{\sqrt{ab}} \log\frac{\sqrt{ab+1}}{\sqrt{ab-1}}$$

If $\frac{1}{\sqrt{1-2ax+a^2}} = 1 + P_1 a + P^2 a^2 + \ldots$ shew that

$$\int_{-1}^{+1} P_m P_n dx = 0, \text{ and } \int_{-1}^{+1} P_n^2 dx = \frac{2}{2n+1}.$$

WEDNESDAY, 22ND JANUARY, 2 TO 5 P.M.

PROBLEMS IN PURE MATHEMATICS.

I. Prove that if n be a positive integer

$$1 + (n+1) + \frac{(n+1)(n+2)}{1^2.2^2} + \frac{(n+1)(n+2)(n+3)}{1^2.2^2.3^2} + \ldots$$

$$= e\left[1 + n + \frac{n(n-1)}{1^2.2^2} + \frac{n(n-1)(n-2)}{1^2.2^2.3^2} + \ldots\right],$$

where e is the base of the natural system of logarithms.

II. A candidate is examined in three papers to each of which is assigned a maximum of m marks. His total on the three papers is $2m$. Show that there are $\frac{(m+1)(m+2)}{2}$ ways in which this can occur.

III. Through the angular points of a triangle ABC draw straight lines perpendicular to the lines bisecting the angles. If s, s' be the semi-perimeters of the original triangle and the new triangle, shew

that the area of the new triangle is $\dfrac{ss'}{\cos\frac{1}{2}A + \cos\frac{1}{2}B + \cos\frac{1}{2}C}$.

IV If I, O be the centres of the inscribed and circumscribed circles of a spherical triangle, r, R their radii, and $2s = a + b + c$, prove that

$$2 \sin s \cos IO = (\sin a + \sin b + \sin c) \cos r \cos R.$$

V. Prove that if the n roots of an algebraical equation be α, β, γ, δ, ..., $6\Sigma(\alpha-\beta)(\alpha-\gamma)(\alpha-\delta) = (n-3)\Sigma(2\alpha-\beta-\gamma)(2\beta-\gamma-\alpha)(2\gamma-\alpha-\beta)$

VI. Show that the cosine of half the angle between tangents drawn from a point on an ellipse to an inner confocal ellipse, varies as the diameter of the former parallel to its tangent at that point.

VII. Prove that the section of the surface $u=0$ by the plane $lx + my + nz = 0$ will be a rectangular hyperbola if $l^2(b+c) + m^2(c+a) + n^2(a+b) = 2mnf + 2nlg + 2lmh$.

VIII. A chord PQ of an ellipse is normal at P. Prove that when PQ is a minimum, its length will be $\dfrac{3\sqrt{3}\, a^2 b^2}{(a^2+b^2)^{\frac{3}{2}}}$.

IX. Show that the whole area between the curve $y^2(a-x)(x-\beta) = k^4$, and the lines $x=\alpha$, $x=\beta$, is $2\pi k^2$.

X. If $I = \int_0^\infty e^{-x} \log \frac{1}{x}\, dx$, and $I' = \int_0^\infty e^{-x} (\log x)^2\, dx$, show that $I' = I^2 + \frac{\pi^2}{6}$.

THURSDAY, 23RD JANUARY, 10 A.M. TO 1 P.M.

DYNAMICS.

I. State Newton's laws of motion. Explain how the second law gives us a mode of measuring mass and force. In a derived system of units the fundamental units are those of length, time, and force; find the dimensions of mass, acceleration, and energy.

If in a derived system of units the work done in the unit of time by an engine of one horse-power be represented by 55, if the acceleration of gravity (32) be the unit of acceleration, and if the density of water, one cubic foot of which weighs 1000 oz., be represented by 400, find the unit of force.

II. A point moves with constant speed in a straight line; find its angular velocity and its angular acceleration at any instant about a point at a given distance from the line.

A point B describes a circle with constant angular velocity relative to a fixed point A, and a third point C, moving in the same plane as B, describes a circle relative to B with constant angular velocity. Find the hodograph of C's motion.

III. Prove that if a particle move under the influence of a force in a centre, the area traced out by the radius vector is proportional to

the time, and that the equation of the path of the particle is $\frac{d^2u}{d\theta^2}+u=\frac{F}{h^2u^2}$.

Show that the path of a particle projected from an apse at a distance $\frac{a}{2}$ with a velocity equal to the velocity from infinity and moving under a central attraction $\mu r^2\left(\frac{4}{a}-\frac{3}{r}\right)$ is the curve $r(1-\sin 2\theta)=a$.

IV. A particle is constrained to move on a given smooth plane curve under given forces in the plane of the curve. Determine the motion, and prove that for a conservative system of forces the change in the kinetic energy of the particle in passing from a given point in its path to any other is independent of the path pursued.

A particle slides down a cycloid whose axis is vertical and vertex upwards, the velocity at any point being that due to the level of the tangent at the vertex. Find the pressure on the curve at any point, the point at which the particle will leave the curve, and the time measured from a given instant, during which the particle will remain on the curve.

V. Find the equations of the central axis of a system of forces.

Three forces P, Q, R, no two of which are parallel, act along three non-intersecting edges of a cube; find the equations of the central axis. Supposing Q to vary in magnitude while P and R remain fixed, find the surface generated by the central axis.

VI. Obtain polar formulæ for finding the centroid (1) of a solid of revolution, (2) of a surface of revolution.

The parabola $\frac{l}{r}=1+\cos\theta$ revolves round the initial line. Show that the centroid of the portion of the surface generated which is contained between the vertex and a plane through the focus perpendicular to the axis is at a distance $\frac{\sqrt{2}+1}{5(2\sqrt{2}-1)}l$ from the vertex.

VII. A heavy inextensible string of uniform density and section hangs suspended from two given points. Find the equation of the curve in which it hangs and the tension of the string at any point.

Prove that if a heavy inextensible string of uniform density hang suspended from two points in the form of the arc of a cycloid whose base is horizontal, the square of the section at any point varies inversely as the cube of the distance of the point from the base of the cycloid.

VIII. Find the attraction (1) of a circular plate on a particle placed at a given point in the axis of the plate, (2) of a segment of a paraboloid of revolution on a particle placed at its vertex.

The height of a mountain in the form of a paraboloid of revolution is h and the diameter of its base $2\sqrt{3}\,h$. Assuming the mountain to be of uniform density ρ, and assuming that the earth is spherical and that the density at any point depends only on the distance of the point from the centre, prove that σ, the mean density of the earth,

is given by the equation $\frac{g'}{g} - \left(\frac{r}{r+h}\right)^2 = \frac{3\rho h}{4\sigma r}$ (2—3log 3), where g and g' are the values of gravity at the sea level and at the top of the mountain respectively, and r is the radius of the earth.

THURSDAY, 23RD JANUARY, 2 TO 5 P.M.

DYNAMICS.

I. A body of mass M has moments of inertia Mq^2, Mq^2, Mr^2, about the principal axes through its centre of gravity G. Find the moments and products of inertia about a set of axes parallel to the principal axes at G, and meeting in a point P whose co-ordinates referred to the principal axes at G are (a, b, c).

Find also the moment of inertia about an axis through P whose direction cosines referred to the principal axes at G are l, m, n.

II. Show how to find the motion of a system of connected bodies moving in two dimensions.

A heavy string of length l and mass m is rolled round a reel of mass M whose axis is horizontal. A mass μ is fastened to the free end of the string, and it is allowed to unroll under the action of gravity. Neglecting friction, show that the length of string unrolled in time t is $\frac{\mu l}{m}$ (cosh at—1) where $a = \sqrt{\left(\frac{g}{l}\,\frac{2m}{M+2\mu+2m}\right)}$.

III. Explain what is meant by *impulse*, *impulsive force*. Find the equations of motion of a body subject to given impulses.

IV A body is moving on a plane and one point is suddenly fixed. Show how to find the instantaneous change of motion.

Two equal uniform rods AB, BC freely jointed at B, and in one straight line, are moving with uniform velocity in a direction normal to their length on a smooth horizontal table when suddenly the centre of AB is fixed. Show that the initial angular velocities are equal, and that four-sevenths of the energy of the rods is destroyed by the impact. Find also the magnitude of the blow and of the impulse at B, in terms of the original momentum of each rod.

V. Show that the most general motion of a rigid body is equivalent to a motion of translation along a line, and a motion of rotation about that line.

If radii vectores be drawn from a fixed point O to represent in direction and magnitude the velocities of all points of a rigid body in motion, prove that the extremities of these radii at any one instant lie in a plane.

VI. Prove Euler's equations for the motion of a body about a fixed point. If G be the resultant angular momentum at any instant, and E the moment of the forces about the axis of resultant angular momentum, prove that $\frac{d}{dt}(\log G) = E$.

VII. A cylinder of mass M is at rest on a smooth horizontal table and a perfectly rough cylinder of mass m is placed on it, at an angular

distance a from the highest point, so that the axes are parallel. Show that the lower cylinder begins to move along the table with an acceleration $\frac{2m\sin\alpha\cos\alpha}{3M+2m\sin^2\alpha}g$.

VIII. Distinguish between the kinetic and potential energies of a system of bodies. Can a *single* rigid body have potential energy?

Two particles are connected by an elastic string of natural length l and of insignificant mass. One of the particles being held fixed, and the string being straight and unstretched, a constant external force in the direction of the string acts on the second particle until the length of the string is $l+h$. Find the total energy given to the system, and state how much of it is potential and how much kinetic.

IX. A perfectly rough solid cylinder of mass m and radius b is free to move round its axis which is horizontal. Round it is placed a perfectly rough hollow cylinder of mass M and radius a, the axes of the cylinders being parallel. Prove that the time of a small oscillation of the system under the action of gravity about a position of equilibrium is $2\pi\left\{\frac{M+m}{2M+m}\cdot\frac{2(a-b)}{g}\right\}^{\frac{1}{2}}$.

FRIDAY, 24TH JANUARY, 10 A.M. TO 1 P.M.

HYDROSTATICS, HYDRODYNAMICS, AND OPTICS.

I. Find the conditions of equilibrium of a fluid subject to the action of given forces.

The particles of a given mass of homogeneous liquid attract one another according to the law of nature, and the liquid is in equilibrium in the form of a sphere; find the pressure at any point, and show that the mean pressure is equal to two-fifths of the pressure at the centre, supposing that the pressure at the free surface is zero.

II. Find the coordinates, referred to the principal axes at the centre of gravity, of a plane vertical area a immersed in heavy fluid; the depth of the centre of gravity being h and the angle the axis of x makes with the surface of the liquid being θ.

A rhombus is wholly immersed in a heavy fluid with its plane vertical: it revolves about a fixed axis passing through its centre perpendicular to its plane. Show that the centre of pressure describes an ellipse on the plane, the axes of which lie along the diagonals, and are proportional to their squares.

III. A solid body is partially immersed in liquid contained in a vessel. Show that the potential energy of the system is changed by pushing the body further down into the liquid, and find the amount of the change corresponding to a small depression of the body.

A sphere of density $m\sigma$ is immersed in a large vessel of liquid of density σ. The centre is then depressed through a depth h. Find an expression for the gain in potential energy of the system. Hence prove that if the sphere were originally floating at rest, the gain of

potential energy corresponding to a small depression h would be, to a first approximation, $\frac{1}{2}\pi\sigma g h^2 a^2(1-z^2)$ where z is the middle root of the equation $(z+1)^2(z-2)+4m=0$, and a is the radius of the sphere.

IV. A heavy sphere floats in a liquid contained in a vertical cylinder; the density of the liquid is double that of the sphere, and the radius of the sphere is half that of the cylinder. Prove that the time of a small vertical oscillation is the same as that of a simple pendulum of length equal to half the radius of the sphere.

V. Show that a spheroid is a possible form of the free surface of a gravitating fluid, rotating uniformly, in a state of relative equilibrium, about an axis through its centre of mass.

If the volume of the fluid be V and if V_1 and V_2 be the volumes of two surfaces of equal pressure, prove that if p be the mean pressure throughout the space between these surfaces, and p_0 the pressure at the centre, then

$$\frac{p_0-p}{p_0}=\frac{3}{5V^{\frac{2}{3}}}\frac{V_1^{\frac{5}{3}}-V_2^{\frac{5}{3}}}{V_1-V_2}$$

VI. Prove Green's theorem, and thence or otherwise prove that $\int\frac{d\phi}{dn}d\sigma=0$, $\frac{1}{2}\rho\int\phi\frac{d\phi}{dn}d\sigma=T$ where ϕ is the velocity potential of a homogeneous fluid of density ρ, $d\sigma$ is an element of the surface, and dn an element of the normal, to a closed surface σ described in the fluid, and T is the kinetic energy of the fluid contained in σ.

Hence show that if a quantity of fluid filling a closed vessel be set in motion by moving the vessel or altering its shape, it will cease to move as soon as the motion of the vessel is stopped.

VII. Define the centre, principal or nodal points, principal foci, and focal length, of a lens. If F, F' be the focal points, Q, Q' a pair of conjugate points, prove that $QF.\ F'Q'$ is equal to the square of the focal length.

If P_1, P_2, be any pair of conjugate foci with respect to a system of lenses on a common axis, F_1, F_2, the corresponding principal foci, and Q_1, Q_2, any other pair of conjugate foci, then, with the usual convention as to signs, $\frac{P_1F_1}{P_1Q_1}+\frac{P_2F_2}{P_2Q_2}=1$

VIII. Find an expression for the aberration of the extreme ray of a small pencil incident directly on a spherical refracting surface. If the origin of the pencil is a point distant μr from the centre of the surface, r being the radius, show that there will be no aberration.

Light incident parallel to the axis falls upon a convexo-plane lens. Show that the aberration of the extreme ray for refraction through the lens is equal to $\frac{(\mu-1)^3(\mu+1)+1}{2\mu^2(\mu-1)}\frac{y^2}{r}$ where y is the radius of the circular plane face, and r that of the spherical face.

IX. Find the differential equation to the path of a ray of light in

a heterogeneous medium. If the path is a circle, centre (a, b), prove that $\mu = \frac{1}{x-a} f\left(\frac{y-b}{x-a}\right)$.

X. If a ray of white light be refracted through a prism in a principal plane, prove that the dispersion of the two colours whose refractive indices are μ and $\mu + d\mu$ is $\frac{d\mu \sin i}{\cos\psi \cos\phi'}$ with the usual notation.

Find the condition that this may be a minimum, and in that case, prove that if $\mu = \sqrt{2}$, the angle of incidence is $\cos^{-1}\sqrt{\left(\cos\frac{4i}{3}\right)}$.

FRIDAY, 24TH JANUARY, 2 TO 5 P.M.

ASTRONOMY.

I. Describe the Transit instrument and show how the uncorrected deviation error is determined by observing the transits of two known stars.

II. Show that the measurement of the sizes and distances of heavenly bodies depends ultimately upon our knowledge of the dimensions of the earth, and explain by what observations these dimensions are obtained.

Given that $\sin 23^\circ 28 = \frac{5}{13}$, prove that the comparative areas of the torrid and each of the temperate zones are to one another as 10 : 7.

III. Prove that the sun's apparent diameter varies as $1 + \cdot 0167 \cos \theta$, where θ is the distance of the sun from apogee.

Expand the true anomaly in terms of the time to the second power of the eccentricity.

IV. How should the Third Law of Kepler be modified when the mutual attraction of bodies is taken into account?

Assuming that $E = 75\ M$, prove that $S = 361473\ E$, where S, E, M represent the masses of the Sun, Earth, and Moon.

V. Obtain equations for finding the lengths of day and night in a given place on a given day.

On the 19th of January the sun rises at Madras 25 minutes later than on the 22nd of November, although it has the same declination on both days. Why?

VI. Prove that the parallax in latitude of a star is $p \sin$ (lat: of star) $\cos(\pi + \odot - *)$.

The two stars 61 *Cygni* are $15''\cdot 5$ apart, their parallax being $0''\cdot 563$. Show that the distance between them is more than $27\frac{1}{2}$ times the radius of the Earth's orbit.

VII. Explain the phenomenon known as the *harvest moon*, and find the latitude in which it will be most noticeable.

Show that the new moon in March behaves exactly as the full moon in September.

VIII. Investigate the conditions necessary for a lunar or solar

eclipse. Why is the maximum duration of an annular eclipse greater than the maximum duration of a total eclipse of the sun?

IX. Find an expression for the phase of a planet and show that when Venus is brightest, $4\sec E - 3\cos E = 4\frac{r}{a}$; where E is the elongation of Venus and r, a, the distances of Venus and the earth from the sun.

X. Name twelve stars of the first magnitude and the constellations in which they are found.

Herschel mistook Uranus at first for a comet. Why? Point out the characteristic differences of a comet and a planet.

Why is it that a satellite of Mars will, for an observer on that planet, appear to rise in the West and set in the East?

Write short notes on the following comets:—Halley's; Encke's; Biela's; and Tempel's.

SATURDAY, 25TH JANUARY, 10 A.M. TO 1 P.M.

ADDITIONAL PAPER ON MIXED MATHEMATICS.

I. Investigate the conditions that a system of forces may be equivalent to a couple.

The lines of action of four forces in space are AA', BB', CC', DD', and $ABCD$, $A'B'C'D'$ are the two lines which intersect them, and O, O' are the points where these two lines are met by their shortest distance. Show that, if the magnitude of the forces be $\alpha AA'$, $\beta BB'$, $\gamma CC'$, $\delta DD'$, the system is equivalent to a couple, provided and not unless

$$\alpha\, OA + \beta\, OB + \gamma\, OC + \delta\, OD = 0$$
$$\alpha\, O'A' + \beta\, O'B' + \gamma\, O'C' + \delta\, O'D' = 0$$
$$\alpha + \beta + \gamma + \delta = 0$$

Determine the direction of the axis of the couple when these conditions are fulfilled.

II. Find the potential of a gravitating rod, of uniform density and small section, at any external point.

If $2c$ be the length of the rod and its density be unity, show that the potential is constant and equal to V at all points of the surface represented by the equation $\frac{x^2}{\lambda^2} + \frac{y^2+z^2}{\lambda^2-1} = c^2$, where $\lambda = \coth \frac{1}{2}V$.

III. A heavy particle moves on a smooth surface of revolution whose axis is vertical; determine the motion.

A smooth right cone has its axis vertical and vertex downwards. A particle is projected inside it in a horizontal tangent at a distance R from the axis with velocity $R\Omega$. Show that when it is again moving horizontally its distance r from the axis is given by the equation $R^2(R+r)\,\Omega^2 \tan\alpha = 2gr^2$, α being the semi-vertical angle of the cone.

IV. A heavy particle of weight W moves in a medium in which the resistance varies as the nth power of the velocity: prove that if F be the resistance when the direction of motion makes an angle ϕ with horizon, $W = nF \cos^n\phi \int \sec^{n+1}\phi\, d\phi$.

V. A string lies in the shape of a given curve on a smooth horizontal plane, and is acted on at one end by an impulsive tension; show that the impulsive tension T at any point is given by $\frac{d}{ds}\left(\frac{1}{m}\frac{dT}{ds}\right) - \frac{1}{m}\frac{T}{\rho^2} = 0$, where ρ is the radius of curvature at the point, and m the linear density.

If the chain is in the form of the arc of a parabola AP, where A is the vertex, and P the end at which the impulsive tension is applied, and if the density at any point Q varies inversely as $\sqrt{SQ}$, where S is the focus; show that the impulsive tension at any point varies as $\frac{\theta}{\cos\frac{1}{2}\theta}$, where $ASQ = \theta$.

VI. Prove Lagrange's equations for the motion of a system of bodies. Employ them to determine the motion in an Atwood's machine.

VII. Light from a luminous point L is reflected n times by a circular reflector, centre O and radius b, and the envelope of the ray after n reflexions is called the nth caustic. If O be the origin, OL the axis of x, $OL=a$, a ray starting from L in the direction LB touches the caustic in the point whose co-ordinates are

$$x = -(-)^n a\sin\theta\,(\sin P + R\cos P)$$
$$y = (-)^n a\sin\theta\,(R\sin P - \cos P)$$

where $1/R = 2n\tan\alpha - \tan\theta$, $\theta = BLx$, α=angle of incidence, and $P = 2n\alpha - \theta$.

If L is on the circumference, show from these values of x and y that the nth caustic is an epicycloid, the radii of the fixed and rolling circles being $b/(2n+1)$, and $nb/(2n+1)$.

VIII. Show how to find the longitude by the method of lunar distances. If the distance be used without "clearing" it, prove that the consequent error in the longitude thus determined will be (in degrees)

$$45\left\{\frac{\delta'}{h}\frac{\sin a - \sin a'\cos d}{\cos a'\sin d} + \frac{\delta}{h}\frac{\sin a' - \sin a\cos d}{\cos a\sin d}\right\}$$

where a and a' are the altitudes of the star and moon, δ and δ' the corrections to be applied to the observed altitudes to get the true altitudes, and d the observed lunar distance, and h the change in the lunar distance for three hours as given in the Nautical Almanac.

IX. An inelastic homogeneous liquid of density ρ is in irrotational motion under the action of forces which have a potential $-V$; prove the equation $\frac{p}{\rho} + V + \frac{1}{2}v^2 + \frac{d\phi}{dt} = F(t)$, v being the resultant velocity at the point where the pressure is p and velocity potential ϕ, and $F(t)$ a function of the time, whose value depends on the boundary conditions.

Deduce, or find independently, the equation of motion of a heavy fluid moving in a tube of small and uniform section.

A tube in the form of a semicircle of radius a whose plane is vertical, vertex downwards, and extremities in the same horizontal line, is one-third filled with mercury and its ends then closed. If

the mercury be slightly disturbed, show that the time of a small oscillation is $\pi\sqrt{(\pi a/g)}$, the height of the barometer being one-eighteenth of the length of the tube.

SATURDAY, 25TH JANUARY, 2 TO 5 P.M.

PROBLEMS IN MIXED MATHEMATICS.

I. A number of heavy particles are projected from the same point at the same instant, with any velocities in any directions. Prove that at any subsequent time the tangents to their paths meet in a point, and that the locus of this point is a straight line.

II. Given two systems of forces; if every force of the one system be multiplied by every force of the other and by the cosine of the angle between the two forces, the sum of these products is equal to the product of the resultants of the two systems multiplied by the cosine of the angle between them.

III. A point P moves in a plane so that its component velocities along the lines PA, PB, joining it to two fixed points A, B, in the plane, are u, v. Prove that its component accelerations along the same lines are

$$\frac{du}{dt}+\frac{uv}{2r_1^2r_2}\left(r_1^2-r_2^2+a^2\right),$$

$$\frac{dv}{dt}+\frac{uv}{2r_2^2r_1}\left(r_2^2-r_1^2+a^2\right),$$

where $a=AB$, $r_1=AP$, $r_2=BP$.

IV. The law of attraction being that of the inverse distance, prove that a uniform circular disc attracts an external particle in its own plane as if it were collected at its centre.

V. A heavy elastic string $ABC\ldots K$ is hung vertically from the end K. If the portions AB, BC, ..are each equal to the nth part of the string, when unstretched, show that their extensions when the string is hung up are proportional to the odd numbers 1, 3, 5 .. $2n-1$.

VI. On each of two smooth non-intersecting straight wires which are inclined to one another at an angle $2a$, is placed a small ring of mass m. The rings attract each other with a force μmr where r is the distance between them. Prove that if they are started from rest, at points distant a and b respectively from the shortest distance between the wires, their distances from the shortest distance at time t are respectively

$$\tfrac{1}{2}\left\{(a+b)\cos(\sqrt{2\mu t}\sin a)\pm(a-b)\cos(\sqrt{2\mu t}\cos a)\right\}$$

VII. A uniform heavy rod of length a is freely moveable about one end. The other end is projected horizontally from a position in which the rod makes an angle a with the vertical Find the velocity of projection so that the rod may (1) just rise to the horizontal position, (2) make a constant angle with the vertical.

VIII. An elliptic area is immersed in homogeneous fluid so that the depth of its highest and lowest points A and B are h_1, h_2. Show

that the centre of pressure is in the diameter AB, and divides it in the ratio $5h_2+3h_1 : 5h_1+3h_2$.

IX. The form of a surface of revolution such that it may be uniformly illuminated by light proceeding from a point on its axis is given by the equation $r^2=c^2\sin 2(\alpha+\theta)$.

X. An altazimuth is adjusted for transit observations in the prime vertical. Show that if it has small errors λ and α of level and azimuth respectively, of such signs as to affect the time of transit in opposite ways, a star which crosses the prime vertical at an altitude $\tan^{-1}\frac{\alpha}{\lambda}$ will have its time of transit unaffected.

BRANCH II.A.

MONDAY, 20TH JANUARY, 10 A.M. TO 1 P.M.

PHYSICS.

I. Sketch and describe Morin's apparatus and the method of using it for experimentally verifying the laws of falling bodies. In what respect is this apparatus an improvement upon Attwood's machine?

II. Account for the variations in the intensity of terrestrial gravitation in different parts of the earth. How may the intensity of the force of gravity be ascertained by means of the pendulum?

III. Give a concise account of the apparatus which you would use and the method which you would adopt in determining the Specific Gravity of (1) an insoluble powder, (2) a substance soluble in water, (3) a liquid.

IV. "At the same temperature the density of a gas varies directly as the pressure." Discuss experiments to shew how far this statement is correct.

V. Explain the action of the siphon and shew how the velocity of efflux may be determined.

VI. Explain clearly the propagation of sound (1) in a uniform tube, (2) in an open space.

VII. Discuss the effects of pressure, temperature, and wind upon the velocity of sound in air.

VIII. State the laws of the transverse vibrations of strings, and shew how they may be illustrated qualitatively and quantitatively.

IX. Describe and explain an optical method of comparing two tuning forks.

X. Explain clearly how the intensity of two sounds of the same pitch may be compared.

MONDAY, 20TH JANUARY, 2 TO 5 P.M.

PHYSICS.

I. 1. A cylinder of platinum, weighing 120 grams in air, is found to weigh in a certain liquid 115·45 grams at 12°C., and 116·48 grams at 53°C. If the coefficient of cubical expansion of platinum is 1.000026, find the coefficient of absolute expansion of the given liquid.

2. Three liquids A, B, C (without action on each other) are at temperatures t_a^0, t_b^0, t_c^0 respectively. When equal masses of A and B are mixed, the mixture has a temperature T_1, and when equal masses of A and C are mixed, the temperature is T_2; find the temperature of a mixture of equal masses of B and C.

II. Discuss the laws of Atomic Heat and Molecular Heat; also some of the more important exceptions to those laws.

III. What are the difficulties connected with the determination of the specific heat of a gas at constant volume? Discuss the method based on the theory of the propagation of sound.

IV. 1. Shew that for a given mass of any gas the product of the pressure and the volume is always proportional to the absolute temperature; and that the specific heat of unit mass of any given gas at a constant volume is the same for all pressures and temperatures.

2. One litre of oxygen at normal temperature and pressure has a mass of 1·43 grams, and a specific heat at constant pressure of ·22 referred to an equal mass of water. Assuming that the ratio of the specific heat at constant pressure to that at constant volume is 1·41 : 1, deduce the mechanical equivalent of heat. [Density of mercury = 13·6.]

V. 1. Explain clearly what is meant by isothermal lines on an Indicator Diagram. How do these differ for any gas according as it is wholly gaseous, or partly liquified? Compare the isothermals of steam in contact with water, and of carbonic anhydride in contact with liquified CO_2.

2. What are Adiabatic curves, and what is their relation to Isothermals? Give a rough comparative diagram for steam.

VI. 1. Prove the formula connecting the conjugate foci of a double concave lens.

2. State and prove the advantages of the Huyghens or Campani eye-piece.

VII. 1 Explain clearly the difficulty as to the rectilinear propagation of light on the wave theory, and how it is satisfactorily accounted for.

2. If I hold a glass plate, over which some lycopodium powder has been sifted, between my eye and a distant point of light, I see an iris-coloured halo. Account for this, and explain how the size of the lycopodium particles may be determined from the dimensions of the halo, and the positions of the observer and the glass.

VIII. 1. On what ground is the diffraction spectrum, and not the prismatic spectrum, to be regarded as the normal spectrum?

2. Show how with a diffraction grating of 10,001 lines to the inch I may experimentally find the wave length of sodium light.

IX. Give Huyghens's construction for the direction of the ordinary and extraordinary rays in a uniaxial crystal. Does it apply to biaxial crystals also? Why?

X. Give some account of the iris-coloured rings, and dark or white brushes seen with crystalline plates interposed between a pair of Nicol's prisms or tourmalines. Give also a general explanation of the phenomena.

TUESDAY, 21ST JANUARY, 10 A.M. TO 1 P.M.

PHYSICS.

I. Distinguish between idiostatic and heterostatic electrometers, and show the advantages of the latter.

Describe Sir W. Thomson's quadrant electrometer and explain how it is used.

II. In electrostatics what is meant by an equipotential surface? Show how it may be investigated. What is meant by lines of electric force? Show how they are related to the equipotential surfaces and to the surfaces of the conductors giving rise to the field.

III. Explain the difference between the terms electric potential, density, and quantity. Show how the potential of a conductor may be varied, and illustrate the different methods by the analogy afforded by the methods of altering the pressure of a gas.

IV. Explain clearly what is meant by the C.G S. system of units, and show how the dimensions of the units of current, resistance, and electromotive force are determined.

V. Describe Thomson's method of determining the resistance of a galvanometer by means of its own deflection and Mance's method of measuring the resistance of a battery, showing the relation between the two methods.

VI. It has been shown by Magnus that if a circuit be formed of a single metal, no current will be produced in it however the temperature and section of the conducting circuit may vary in different parts. Show how in certain cases this law fails, and how it must be modified to be in agreement with facts.

VII. Describe Poggendorff's and Latimer Clark's methods of comparing the electromotive force of two batteries, and discuss their relative value.

VIII. What is meant by an alternating current? How may it be produced? In what way is it affected by being made to pass through the coil of an electromagnet and to what is this action due? Describe any forms of apparatus for measuring alternating currents.

IX. What is meant by unit magnetic pole, magnetic moment, and magnetic field? How may a magnetic field be compared with that of the earth?

How does Faraday account for the difference between magnetic and diamagnetic bodies? Explain what is meant by diamagnetic polarity, giving a rough description of the apparatus by which its existence was proved by Weber and Tyndall.

WEDNESDAY, 22ND JANUARY, 10 A.M. TO 1 P.M.

PHYSICS.

Practical Examination.

I. Verify experimentally with the given inclined plane and block, (*a*) without, and (*b*) with lubrication, that the tangent of the angle of friction is equal to the coefficient of friction.

II. Measure, with the given micrometer callipers, the length and diameter of the given cylinder, correct to the thousandth of an inch.

III. Show how to test the correctness of the given aneroid barometer.

IV. Tune the given Monochord string to unison with the given tuning fork, and determine approximately the vibration number of the fork by the method of resonance.

V. Produce six different sound figures with the given square Chladni's plate.

VI. Adjust the given spectroscope to show the D line double.

VII. Determine approximately by the grease spot, or by the shadow method, the candle power of the given lamp flame.

VIII. Show how to prove experimentally that light polarised by refraction through glass is polarised in a plane at right angles to the plane of polarisation by reflection at the surface of the same glass.

N.B.—Candidates are required to write out an abstract of their methods of procedure and results for each experiment.

WEDNESDAY, 22ND JANUARY, 2 TO 5 P.M.

PHYSICS.

Practical Examination

Note.—Candidates will be required to name the apparatus necessary for making the following measurements and experiments before proceeding to perform them.

I. Prove by experiment that radiant heat varies inversely as the square of the distance from the source.

II. Determine the latent heat of water, and the water equivalent of the calorimeter employed. Enter the result thus :—

Mass of water in calorimeter.
Temperature of do.
Mass of ice added.
Resulting temperature.
Water equivalent of calorimeter.
Calculated latent heat of water.

III. Show that bodies inside a closed or nearly closed metallic case are shielded from the action of electrically charged bodies in the neighbourhood.

IV. Investigate the rate of decrease and increase of magnetism of a magnet with temperature, showing separately the decrease of magnetism with increase of temperature, and the increase of magnetism with decrease of temperature. It is preferred that these results should be plotted.

V. Determine the internal resistance of a given voltaic cell by Mance's method.

THURSDAY, 23RD JANUARY, 10 A.M. TO 1 P.M.

CHEMISTRY.

I. Give an account of the views that have prevailed concerning the nature of combustion from the 17th century to the present time.

It has been stated that Stahl's Phlogistic theory expresses imperfectly a great truth. Explain this statement fully.

II. Describe fully the two most important methods in use among chemists for determining the atomic weights of the elements.

A metallic chloride contains 60·68 per cent. of chlorine, and the specific heat of the metal is ·29; determine the atomic weight of the metal.

III. Distinguish between empirical, molecular, and rational formulæ, and give three examples of each kind.

State which of the following formulæ are empirical and which molecular, and give the reasons upon which your conclusions are based:—NH_3, FeO, CaO, CO, $FeCl_2$, Fe_2Cl_6, $BaCl_2$, PCl_3, HgCl, $HgCl_2$.

An arsenic compound has the following percentage composition:—As 75·76; O 24·24; its vapour density (air equal to unity) is 13.8. Determine its empirical and molecular formulæ.

IV. Give an account of the Periodic Law of Mendeleef. What predictions arrived at by the aid of this law have been verified?

V. In what combinations do phosphorus and arsenic occur in nature? Are any of these compounds isomorphous? Compare the properties of these two elements, and of their compounds with (1) hydrogen, (2) oxygen, and (3) hydroxyl.

VI. Mention the most important of the natural silicates, and show the part that they play in art and nature.

To what class of salts do the majority of the silicates belong? Illustrate your answer by examples.

VII. Compare the phenomena of the diffusion of liquids with those of gases. What important physical theory gains support from the facts of diffusion?

According to the kinetic theory of gases, if two gases have the same temperature, their molecules have the same mean molecular kinetic energy, or $\frac{1}{2}mv^2=\frac{1}{2}m'v'^2$. Show that Graham's law of the diffusion of gases can be deduced from this equation.

VIII. What is meant by 'dissociation'? Give examples of bodies which exhibit this phenomenon, and mention in each case the evidence there is that dissociation has taken place.

THURSDAY, 23RD JANUARY, 2 TO 5 P.M.

CHEMISTRY.

I. Find the formula of a mineral which on analysis shows the following percentage compositions:—Silica 65·37. Alumina 18·74. Ferric oxide 0·13. Lime 0·27. Potassium oxide 12·98. Sodium oxide 2·48.

II. Describe how you would determine the quantity of iron in a solution both gravimetrically and volumetrically. What weight of iron is converted from a ferrous into a ferric salt by one gram of potassium (1) permanganate, and (2) dichromate?

K=39·1. Mn=55. Cr=52·5.

III. Give an account of the methods which have been employed for obtaining aluminium, and state what improvements have recently been made in the manufacture. How are the alloys of aluminium made and what are their properties and uses?

IV. How does (1) dilute, (2) concentrated nitric acid act on the following metals:—silver, copper, lead, zinc, and iron.

V. What is meant by the *calorific power* and the *calorific intensity* of a substance? The calorific power of carbon is 8,080 and its calorific intensity 10,175, whilst for hydrogen the numbers are 34,462 and 6,784·4. Explain why in one case the calorific intensity is higher, and in the other case lower, than the calorific power. From the following data calculate the calorific intensity of hydrogen burning in air:—

Latent heat of steam at 0°C	=606·5
Sp. heat of steam	=0·475
Sp. heat of nitrogen	=0·2438
Calorific power of hydrogen	=34,462

Percentage composition of air by weight—N 77, O 23.

VI. V volumes of a hydrocarbon $C_n H_{2n}$ are submitted to combustion. How many volumes of oxygen are required for its complete combustion, and how many volumes of carbon di-oxide are generated?

VII. Give an account of any recent improvements which have been made in the manufacture of (1) steel, (2) carbonate of soda, and (3) sulphuric acid.

VIII. State what you know concerning the chemical action of light, especially on the haloid salts of silver. What is meant by 'orthochromatic photography'?

FRIDAY, 24TH JANUARY, 10 A.M. TO 1 P.M.

MIXED MATHEMATICS.

(Statics and Hydrostatics.)

I. 1. Show that any system of forces acting on a body in one plane is reducible to a single force and a single couple; hence determine the conditions of equilibrium of such a system.

2. Forces proportional to AB, BC, and 2 CA act along the sides of the triangle ABC taken in order; find the magnitude and line of action of their resultant.

II. 1. Show that any solid, or system of heavy particles, can have only one centre of gravity.

2. $ABCD$ is a uniform square plate. If the circle inscribed in the triangle ABC is cut out, find the centre of gravity of the remaining part of the plate.

III. Find the relation between the power and the weight in the system of pullies where each pulley hangs by a separate string; and show that the principle of "virtual velocities" holds good in this case. (Neglect the weights of the pullies.)

IV. 1. Show how to graduate a common steelyard.

2. A weighing machine is constructed so that for each complete stone (14 lb.) placed in the weighing pan an additional weight of 2 oz. has to be suspended at the end of the arm, one foot in length; while the odd pounds in the weighing pan are measured by a weight of 3 oz. sliding along the arm. Show that the distance between the graduations of the arm for successive pounds will be $\frac{4}{7}$ inch.

V. Two inclined planes have a common vertex, and a string passing over a small smooth pulley at the vertex supports two equal weights. If one of the planes be rough, and the other smooth, find the relation between the two angles of inclination of the planes when the weight on the smooth plane is just about to move down.

VI. A hollow cylinder of thin metal is 6 inches in diameter and 12 inches high, and open at both ends. It is placed on a smooth horizontal table and inside it are placed, one above the other, two equal smooth balls of $2\frac{1}{2}$ inches radius. If each ball weighs 6 lb., what must be the weight of the cylinder so that it may just stand without toppling over?

VII. A heavy uniform cube is laid on the highest point of a fixed ball of radius r. If the roughness of the surfaces is sufficient to prevent sliding, find the length of an edge of the cube so that it may rock through a right angle without falling.

VIII. 1. Find the centre of pressure of a plane triangle immersed in a liquid and having one side in the surface.

2. Shew that the centre of pressure of a parallelogram, immersed with one angular point in the surface and one diagonal horizontal, lies in the other diagonal and is at a depth $= \frac{7}{12}$ of the depth of its lowest point.

IX. A hollow regular tetrahedon floats partially immersed in water with one edge in the surface: show that its weight is $\frac{1}{2}$ that of the water it would contain.

X. A right circular cone is divided into two parts by a plane through its axis; and one of these portions is just immersed vertex downwards in water. Shew that the resultant pressure on the curved surface of any frustrum of this semi-cone acts in a direction making an angle $\tan^{-1}(\frac{1}{2}\pi\tan\alpha)$ with the horizontal, α being the semi-vertical angle of the cone.

XI. The readings of a common hydrometer when immersed in three different liquids are l_1, l_2, l_3, and the weights which must be placed in the upper cup of a Nicholson's hydrometer in order to sink it to the mark when placed in the different liquids are w_1, w_2, w_3, respectively. Shew that $l_1 l_2 (w_1 - w_2) + l_2 l_3 (w_2 - w_3) + l_3 l_1 (w_3 - w_1) = 0$.

FRIDAY, 24TH JANUARY, 3 TO 5 P.M.

MIXED MATHEMATICS.

(*Dynamics and Optics.*)

I. 1. If the acceleration of gravity is measured by 32 when the foot and second are units, what will be its measure if 1000 miles and 1 day are the units?

2. In how many hours would an 18 horse power engine empty a vertical shaft full of water, if its diameter be 9 feet, and depth 420 feet, and the weight of 1 cubic foot of water $62\frac{1}{2}$ lbs.?

II. 1. Find the line of quickest descent from a given point to a given straight line.

2. If O be a fixed point, and C a point in a vertical plane through O, find the locus of C when the time of sliding down CO varies as the length of CO.

III. If a body moves uniformly round the circumference of a circle, centre O, show that its motion relative to a fixed diameter XOX' is the same as that of a particle moving along a diameter YOY' at right angles to XOX' under the action of a force directed to O and varying as the distance.

IV. 1. A particle is projected at an angle i to an inclined plane whose inclination to the horizon is α; find the time of flight on the inclined plane.

2. Find also when it will be moving parallel to the inclined plane

V. 1 If the earth be a ball of 4000 miles radius, find approximately the height of a mountain at whose top a pendulum which beats seconds at the sea-level (its base) loses 20 seconds daily.

2. Show that the acceleration of gravity is, at a latitude λ, approximately $\frac{1}{289}g \cos^2\lambda$ less than the value g at the equator if the earth were a sphere at rest.

VI. 1. A mass m_1 impinges directly, with velocity v_1, on another mass m_2 with velocity v_2; determine the velocity of each mass after impact, if the coefficient of elasticity is e; and show whether there is any loss of kinetic energy by the impact.

2. Show that if A and B are smooth perfectly elastic balls and impinge directly, the motion of their centre of gravity will not be affected by the impact.

VII. 1. Two masses m_1 and m_2 are connected by a perfectly flexible string over a smooth fixed pulley. Show that the acceleration of the centre of gravity of the two masses is $g \times \left(\frac{m_1 - m_2}{m_1 + m_2}\right)^2$.

2. A block, of 1 ton weight, is a rectangular parallelopiped 8 feet high with a base 6 ft. $\times$ 6 ft. It is placed on a rough board with its base sides parallel to the length and breadth of the board, and with the centre of its base 6 feet from the one end of the board. The board is now tilted round this end till the block topples over without sliding. Find the work done.

VIII. An object is placed in front of a concave spherical mirror at a distance $= \frac{3}{5}$ radius. Show that if the object and its image be observed by an eye at the opposite end of the diameter of the mirror through the object, the apparent size of the image is twice that of the object.

IX. Show that a ray of light incident at angle α on a glass plate of thickness t and refractive index μ will be displaced laterally through a space $t \sin\alpha \left\{ 1 - \frac{\cos\alpha}{\sqrt{\mu^2 - \sin^2\alpha}} \right\}$

X. Find the condition that the deviation of a ray refracted through a prism in a plane perpendicular to the edge may be a minimum.

XI. 1. Find an expression for the focal length of a thin lens.

2. Prove the following construction for the focus Q conjugate to P with a thin lens. Draw PL to meet the lens in L, and from the centre of the lens C draw CL' parallel to PL to meet a plane perpendicular to the axis through the principal focus on the opposite side of the lens to P in L'. Then LL' meets PC in Q.

SATURDAY, 25TH JANUARY, 10 A.M. TO 1 P.M.

SCIENTIFIC METHOD.

I. Distinguish between inductive and deductive reasoning.

Illustrate your answer by describing Newton's discovery of the Binomial Theorem, and his proof of universal gravitation.

II. Explain the formation of the arithmetical triangle, and show its application to the proof of the law of error.

III. On what supposition is the method of least squares founded? Explain what is meant by probable error, and give the method of finding the probable error of a mean result.

IV. What is the difference between observation and experiment? Illustrate your meaning by giving examples of each. Describe the different ways in which errors may arise through inferring the interdependence of two concurrent phenomena.

SATURDAY, 25TH JANUARY, 2 TO 5 P.M.

SCIENTIFIC METHOD.

I. What are the general objects and methods of experiment? Illustrate them by examples. Show how the results obtained may be vitiated by the existence of unsuspected conditions. What is the principal use of collective experiment?

II. Describe and explain the four divisions into which our knowledge of facts may be divided, and give examples of phenomena that have been accidentally discovered, but which might have been predicted by theory.

III. Bacon gives the name of ostensive instances to cases in which bodies were found to possess certain properties in a remarkable degree. Give examples of this and explain their value as aids to scientific investigation.

IV. Explain the nature and value of exceptional phenomena, and give instances of the following classes:—(1) Imaginary or false exceptions. (2) Apparent but congruent exceptions. (3) Singular exceptions.

BRANCH III.A.

MONDAY, 20TH JANUARY, 10 A.M. TO 1 P.M.

BOTANY.

I. What are the floral characters by which plants belonging to the N. O. *Combretaceæ*, are known from those belonging to *Myrtaceæ*?

II. Describe the organs of fructification in the genus *Fucus*, and illustrate your description by means of diagrams.

III. For what are the following plants remarkable :—*Wellingtonia*, *Welwitschia*, *Theobroma*, *Zea*, *Buxus*, *Tectona* ? In what parts of the world are they to be found growing wild ?

IV. The ammoniacal compounds which furnish plants with the most important part of their food are insoluble in water. How is it, then, that the roots of plants are able to extract them from the soil ?

V. Describe, illustrating your paper by means of diagrams, the motile organs of *Protococcus*.

VI. Give a short account of Dr. Lindley's botanical labours.

MONDAY, 20TH JANUARY, 2 TO 5 P.M.

BOTANY.

I. Describe the inflorescence of the rice plant, and show to what, in the inflorescence of other plants, the glumes, pales, and lodicules are the homologues.

II. What is the cause of geotropism in plants ? Give some instances of positive geotropism.

III. To what class of Thallophytes do Diatoms belong, and for what reasons are they placed by systematists in this class ?

IV. Explain how the whorls of hairs in *Chara* are formed from the apical cell.

V. Define the following terms :—dermatogen, periblem, plerome. Describe the manner in which the tissues which go under these names are developed out of the embryo.

VI. Give an account of some of the most important articles of economic value which are obtained from the N. O. *Anacardiaceæ*.

TUESDAY, 21ST JANUARY, 10 A.M. TO 1 P.M.

BOTANY.

Practical Examination.

I. Describe in technical language the different parts of the flower and fruit of the specimen marked *A*, and state to what natural order it belongs.

II. From the inflorescence of *Capsella bursa-pastoris* dissect out and show the different stages in the development of a campylotropous ovule. Also stain the embryo with iodine solution so as to exhibit the cells of the suspensor, and the first divisions of the apical cell.

III. Make sections through the buds placed before you. Stain the sections with magenta so as to show the first development of the fibro-vascular bundles. Mount in glycerine.

IV. Prove that the honey placed before you contains both dextrose and lævulose.

TUESDAY, 21ST JANUARY, 2 TO 5 P.M.

BOTANY.

Practical Examination.

I. 1. Describe the several structures which may be seen by the naked eye in a longitudinal section made through one of the cones placed before you.

2. Make sections through the ovules. Stain and mount the sections.

II. Test the two powders placed before, you and state what they both are.

III. Examine microscopically the specimen marked *B* and demonstrate the peculiarities of its wood

IV. Make a preparation from the leaf placed before you so as to show its stomata, and point out in what respect they differ from ordinary stomata.

WEDNESDAY, 22ND JANUARY, 10 A.M. TO 1 P.M.

SCIENTIFIC METHOD.

I. By what arguments have modern botanists been led to remove the *Coniferæ* from their old position between Dicotyledons and Monocotyledons, and to place them now between the Phanerogamia and Cryptogamia?

II. Explain by means of instances drawn from the vegetable kingdom the high importance of studying the homologies of the different organs of plants, when endeavouring to ascertain their true relationships.

III. What were the methods adopted by Darwin in establishing the importance of dimorphism to certain plants?

IV. What are the considerations which have caused physiologists to hold the opinion that leaves do not absorb moisture from the air, even though, after having been cut off the branch and allowed to wither, they may revive upon being placed in a damp atmosphere?

V. Discuss the reasons which have been given, both for and against the view that *Achlya* and *Vaucheria* are closely allied.

THURSDAY, 23RD JANUARY, 10 A.M. TO 1 P.M.

PHYSIOLOGY.

I. Describe the apparatus for recording, by means of a Tambour Cardiograph, the heart's movements of a living subject. Draw and analyse the tracing produced thereby.

II. Describe the experiments by which the action of the nervous system on the salivary glands has been determined.

III. Describe and explain the phenomena produced by section of (1) the right Vagus, (2) both Vagi, (3) the right Recurrent Laryngeal nerve

IV. Give an account of the modern views as to fermentation, illustrating your remarks by reference to saliva and urine.

V. How would you determine the quantities of urea and chlorides in a sample of urine?

VI Describe the structure of the cornea and the methods by which the structure can be demonstrated. How is the nutrition of the cornea, bone, and cartilage maintained?

THURSDAY, 23RD JANUARY, 2—5 P.M.

PHYSIOLOGY.

I. Describe any method by which the blood pressure can be estimated. State and explain the chief causes of variation in the arterial pressure.

II. Trace the development of modern views as to the manner in which gases are exchanged between the air and the blood.

III. State the benefits which have accrued to Physiology from the work of David Ferrier.

IV. How is fat formed and stored up in the body? Explain physiologically the methods by which an excess of stored up fat can be got rid of.

V. Give an account of the chemistry of muscular tissue. What chemical changes are characteristic of (1) a contracting muscle, (2) a muscle in a state of rigor mortis?

VI. Give an account of hypnotism. What views have been advanced as to the causes of this condition?

VII. Describe the structure of Corti's organ. What is known as to its function?

FRIDAY, 24TH JANUARY, 10 A.M. TO 1 P.M.

PHYSIOLOGY.

Practical Examination.

I. Arrange on the dead animal supplied an experiment to show the influence of the superior laryngeal nerve on the respiratory movements.

You are required to perform the experiment as if you were experimenting upon the living animal.

II. Make suitable microscopical preparations of the tissues supplied.

III. Identify the specimens placed under the microscopes.

FRIDAY, 24TH JANUARY, 2—5 P.M.

PHYSIOLOGY.

Practical Examination.

I. The sample of urine supplied is suspected to contain albumen and sugar. Demonstrate the truth or otherwise of the suspicion.

II. Demonstrate the laws which govern reflex action, using a frog as the subject and sulphuric acid as an irritant.

SATURDAY, 25TH JANUARY, 10 A.M. TO 1 P.M.

SCIENTIFIC METHOD.

I. "The tendency of all sciences is to become deductive." Discuss this statement.

II. How far may excitation of a nerve produce effects in some portion of the body not supplied by that nerve? By what methods would you attempt to investigate such phenomena?

III. Discuss the relation of the laws of physiology to those of chemistry and physics.

IV. In the investigation of certain physiological problems direct induction is peculiarly difficult. Give some examples of the use which may be made of inductive methods in such cases.

V. Give an account of the advantages which have accrued to (1) man, and (2) animals, from experiments which have involved vivisection. Distinguish between the logical methods employed in the two cases.

VI. Contrast the ancient with the modern use of the word protoplasm.

BRANCH IV.

MONDAY, 20TH JANUARY, 10 A.M. TO 1 P.M.

PSYCHOLOGY.

I. Discuss the nature and value of inferences regarding the mental states of the lower animals drawn (*a*) from their similarity to man in bodily, and more especially in nervous, organization; (*b*) from the similarity of their actions and habits to those of human beings.

Compare the value of such inferences from self to the lower animals, with that of similar inferences from self to other men.

It has been asserted "that the lower animals are far less sensitive to pain than is generally supposed." What reasons occur to you for or against this assertion?

II. Define "physiological heredity" and "psychological heredity." Discuss the question whether mental characteristics are transmitted directly or indirectly. Are characteristics *acquired* by the parents and characteristics *inherited* by them equally likely to be transmitted to the offspring and equally like to hold their ground?

III. Discuss and compare the theories of "Unconscious Cerebration" and "Latent Mental Modifications."

IV. Discuss the views of Dr. Magnus and Mr. W. E. Gladstone on the origin and development of the colour-sense in man.

V. State and criticize the doctrine ascribed to Democritus that all the senses are resolvable into Touch, and compare it with the modern doctrine that all the organs of sense have been developed out of a primitive sense-organ.

Supposing either of the above doctrines were established would it follow that all kinds of sensations are resolvable into one primitive sensibility?

VI. To what extent and in what way does the Will assist in the recall of past experiences?

Discuss the question with the view of determining what parts of the human constitution are subject to direct voluntary control.

VII. Do Retentiveness, the Sense of Difference, and the Sense of Agreement, working in accordance with the Laws of Association, fully explain the operations of all the intellectual faculties, or is there any intellectual power which they cannot account for at all or only partially?

VIII. State the Law of Pleasure and Pain as enunciated by Sir William Hamilton, Dr. Bain, and Mr. Spencer, and examine the several statements in the light of the facts they are designed to embrace.

State the Law of Motives. Are there any phenomena which appear to contradict this law? If there are, what explanation do you give of such phenomena?

Which is the more fundamental—the Law of Pleasure and Pain or the Law of Motives?

MONDAY, 20TH JANUARY, 2—5 P.M.

PSYCHOLOGY.

I. J. S. Mill distinguishes Determinism from Fatalism by this one circumstance, *viz.*, that the former is compatible with the doctrine that *a man may change his character if he pleases.* Examine whether this is a real distinction, or, as is alleged by some of his critics, a distinction without a difference.

II. Distinguish between the relation of Desire to Volition, on the theory of Determinism and that of Free Will. Examine whether there is or is not any standing ground between the theory of motiveless volition and the theory of will as the victory of the strongest motive.

III. Discuss the question, *whether the mind always thinks*, from the point of view of metaphysics, psychology, and physiology, respectively.

IV. If a dream is simply a train of ideas, how do you account for the fact that a dream appears to be a reality, whereas a similar train of ideas in the waking state has no such appearance? Explain the statement that in dreams we often have a manifestation of the "myth-making tendency" of the human mind.

V. 1. (*a*) The psychical nature of Consciousness, (*b*) the object of Consciousness, (*c*) the relation of Consciousness to its object—each of these has been and is a subject of dispute. Explain.

2. Describe the abnormal phenomenon of Double Consciousness.

VI. If the existence of other minds is an inference from the existence of other bodies like our own, examine whether the idealist can have any proof of the existence of other minds. Examine the statement that, "on the hypothesis of Idealism, Evolution must be a dream."

VII. Is the ordinary classification of Cosmological theories into six kinds sufficient, or are there Cosmological theories that cannot be identified with any one of these?

VIII. (1) In what form does Cousin maintain a knowledge of the Absolute? (2) By what arguments does Hamilton impugn this position? (3) It is alleged that Mill's criticism of Hamilton's argument against Cousin is vitiated by his failure to appreciate Hamilton's distinction between the Absolute, the Infinite and the Unconditioned. Examine.

IX. Examine whether the hypothesis of Evolution weakens or destroys the teleological argument for the existence of God. How do those who reject the teleological argument explain the appearance of design in nature?

X. It has been said that the evolutionist theory of innate ideas (as in Spencer) may be regarded as a scientific rendering of Plato's transcendental theory of innate ideas. Discuss this.

TUESDAY, 21ST JANUARY, 10 A.M. TO 1 P.M.

HISTORY OF PSYCHOLOGY.

Pre-Socratic Greek Philosophy with special reference to the Atomists.

I. Discuss the question whether early Greek speculation was of native origin or was derived from an Eastern source.

II. What indications are to be found in Pre-Socratic Greek thought of an approach towards the doctrine of the Conservation of Energy?

III. Compare the fundamental cosmical conception of Heraclitus that all things undergo constant change, with the doctrine of the permanency of Being taught by Parmenides.

IV. Examine the truth of the allegations that the Atomistic Philosophy in its method and aim (*a*) ran outside the general stream of Greek speculation, (*b*) was opposed to it.

V. Show how, according to Democritus, the Universe is developed out of the atoms and the void and motion. In what respects was his doctrine an improvement on that of Empedocles?

VI. State the Pre-Socratic view or views as to the nature of the soul and the relations between it and the body, dwelling more fully on the doctrines of Democritus.

VII. How did the Atomists distinguish between substance and attributes? The founders of this school are regarded as having been the first to propound the distinction of the qualities of matter into primary and secondary. State and criticize their doctrine and compare it with the modern view.

VIII. Discuss the theory of visual perception taught by Democritus, and sketch in general terms its subsequent history in Greek and Roman thought and during the Middle Ages.

IX. What is the nature of the *νοῦς* of Anaxagoras and in what relation did he conceive it as standing to the universe?

X. "Of all the great principles underlying the Materialism of our time," says Lange, "one only is wanting in Demokritos; and that is the abolition of all teleology by the principle of the development of the *purposeful* from the unpurposeful."

Is the remark true of Democritus; and if it is, do you look

upon it as a merit or a defect? Discuss the latter part of the quotation on its merits as a philosophical doctrine.

TUESDAY, 21ST JANUARY, 2—5 P.M.

LOGIC.

Kant's Critique of the Pure Reason.

I. Characterize briefly the Philosophy prevalent in Germany previous to Kant. Kant says that he was roused from his dogmatic slumber by the writings of Hume. What was it in Hume's philosophy that stirred up Kant, and what were the main steps by which the latter passed from dogmatism to criticism?

II. An unsuccessful attempt has been made by Sir W. Hamilton to affiliate the Common Sense Philosophy of the Scottish School with the transcendental Philosophy of Kant. Is the failure due to a radical difference in the two philosophies, or to the omission on the part of Hamilton to bring into prominence their common features?

III. What, according to Kant, are the origin and character of Space and Time? What does he mean by saying that they are empirically real, but transcendentally ideal? With Kant's views as to Space and Time compare the doctrines held ordinarily by Intuitionists and Experientialists respectively.

IV. Explain, exemplify and criticize Kant's division of judgments into (*a*) *a priori* and *a posteriori* (*b*) analytic and synthetic. In what way does Kant establish the possibility of synthetic *a priori* judgments?

V. How according to Kant is Understanding related to Sense, on the one hand, and to Reason on the other? What is the psychological character of Imagination, and how is it related to Knowledge? What does Kant mean when he speaks of Imagination as mediating between Understanding and Sense?

VI. It has been said that, according to Kant, "The understanding has in itself and its categories a pattern which it imposes on the data of sense, reducing them to order just as the fragments of glass in a kaleidoscope are reduced to symmetry by the instrument."

What are the Categories, and how does Kant establish them? What does he mean by "Schematizing the Categories?" Show in what way the Categories perform the function attributed to them in the above quotation.

VII. What does Kant mean by the "Thing-in-itself"?

VIII. Explain and criticize Kant's doctrine that the Ideas of the Reason are regulative but not constitutive of knowledge.

IX. What are the Antinomies of the Reason? With which of the Ideas of the Reason are they connected, and how are they related to the Categories of the Understanding? What two systems of philosophising are represented by the Antinomies? State and examine Kant's solution of them.

X. Examine Kant's treatment of the argument from Design as a speculative proof of the existence of God.

WEDNESDAY, 22ND JANUARY, 10 A.M. TO 1 P.M.

LOGIC.

I. What is Mill's definition of Logic, and what are the principal points of difference between his definition and that of Hamilton? How does Mill bring under the scope of Logic the operations of Definition and Classification?

II. For what reasons would Mill regard Names as the names of Things and not of our Ideas of things? What does he mean by a 'thing' and what by an 'idea'? Does this theory conflict with any doctrine of Mill's Philosophy?

III. Examine Mill's criticism of the Aristotelic Categories.

IV. What is the test, according to Mill, for ascertaining whether a supposed process of Inference is really an Inference? To what result does the application of this test to the syllogism lead?

V. What are the various questions of Inductive Logic on which Dr. Whewell's views are controverted by Mill? State and examine Mill's reasons for maintaining that Kepler's discovery of the elliptic orbit of Mars was not a case of true induction.

VI. "The true expression of Nature's Uniformity," says G. H. Lewes, "is the assertion of identity under identical conditions. Whatever is, *is* and *will be*, so long as the conditions are *unchanged*, and *this* is not an assumption but an identical proposition." Comment on this.

VII. Indicate (1) the weaknesses, characteristic and otherwise, of the various Inductive Methods; and (2) the fields of enquiry in which they are severally most useful. Are any of the weaknesses recognised by Mill capable of removal by causation being viewed as conservation?

VIII. What does Mill style the Geometrical method of philosophising in the social science; and what instances does he give of the attempted applications of this method? How does he show that it is an erroneous method?

IX. Fallacies may be classified, according to Mill, on either of two principles. State them and show how Mill's classification is based on these principles jointly.

To what class of fallacies does Mill refer (1) the Principle of the Sufficient Reason, (2) Bacon's investigation of Forms? Explain how each of these is shown to involve a fallacy.

X. Write a short essay on the use and abuse of Hypotheses.

THURSDAY, 23RD JANUARY, 10 A.M. TO 1 P.M.

LOGIC.

Theory of Induction as held by Aristotle, Bacon, and J. S. Mill.

I. Bacon says that Induction is the foundation of the formation of general notions as well as of general propositions. Discuss the point.

II. Compare the views of Aristotle, Bacon, and J. S. Mill as to

the relation of Induction and Deduction. Criticize carefully Aristotle's "Syllogism from Induction."

III. Compare the views of Aristotle, Bacon, and Mill regarding the Ground of Induction.

IV. How does Aristotle distinguish between reasoning by Induction and by Example? Compare reasoning by Example with what Mill calls reasoning from particulars to particulars.

V. What is "Induction by Simple Enumeration"? How is it to be distinguished from scientific Induction? It has been said that the kind of Induction made use of by Aristotle was the former. Is this true? Give references.

"The secrets of nature," says Bacon, "betray themselves more readily when tormented by art, than when left to their own course."

Explain Bacon's meaning and state the views of Mill on the subject.

VI. In his presidential address before the British Association in 1887, Sir Henry Roscoe, speaking of Dalton, says:—"His method of procedure was that which has been marked out as the most fruitful by almost all the great searchers after nature's secrets, namely, the assumption of a certain view as a working hypothesis, and the subsequent institution of experiments to bring this hypothesis to a test of reality upon which a legitimate theory is afterwards to be based." Compare Dalton's method with that advocated by Bacon

VII. What did Bacon mean by *intellectus sibi premissus* or "the intellect left to itself"?

VIII. "Our method of discovering the sciences merely levels men's wits and leaves but little to their superiority, since it achieves everything by the most certain rules and demonstrations."

Does the history of the Inductive sciences since Bacon's time bear out the above description of the demands which the prosecution of inductive research makes on the mental faculties?

IX. Describe Aristotle's theory of causation, and state the views of Bacon and Mill, pointing out what you consider to be real advances made by each of the latter. Compare the doctrine of causation advocated by Mill with causation viewed as Conservation of Energy.

X. Set forth clearly what you consider to be the amount of truth and of error in the Baconian opposition to Hypothesis

THURSDAY, 23RD JANUARY, 2 TO 5 P.M.

LOGIC.

Venn's Symbolic Logic.

I. How does the author meet the objection to the use of Mathematical symbols in Logic which is a science of *quality* and not *quantity*?

II. It is said to be a fundamental Law of qualitative thought that $x^2=x$. Explain what this law means, and show how it may be connected with the Laws of Thought recognized in ordinary logic. Does the existence of the equation $x^2=x$ necessitate also the existence of the equation $x^3=x^2$?

III. Discuss the question of the possibility of constructing a symbolic logic of "Intent."

IV. The author takes 'alternatives' in the *exclusive* sense. What advantages does he point out in favour of this procedure? Has the opposite system any advantages?

V. 1. What logical meaning does the author give to the mathematical symbol of division; and how does he obtain the formula $\frac{x}{y} = xy + v\bar{x}\,\bar{y}$?

2. Can you give a diagrammatic representation of this formula?

3. Is $\frac{x}{y} = \frac{y}{x}$?

4. If $wy = xz$, can we deduce $y = z$. If not, why not?

VI. What view does the author take of the existential import of propositions; and how is that view forced on him by the necessities of his symbolic procedure? How does he explain the apparent conflict of this view with the following rules of ordinary logic:—(1) that contraries (A and E) are incompatible with one another; (2) that the Particular (I) follows from the Universal (A)?

VII. State and explain Boole's formula for Development of Functions; and apply it to obtain the formula for $\frac{x}{y}$ given in question V. 1.

Prove by development that the whole number of blind persons is equal to the excess, if any, of the sum of the whole number of paupers, added to the whole number of male persons who are not paupers, added to the whole number of paupers who are blind males, added to the whole number of persons who are not paupers but blind, above the whole number of male persons, added to the number of those who being paupers are neither blind nor males.

VIII. Explain the process of obtaining from a logical statement all its elementary denials; and exemplify it in the case of a syllogism in *Barbara*.

How does it happen that while the ordinary logic gives only one syllogistic conclusion the symbolic logic gives an indefinite number?

IX. Describe the author's scheme of diagrammatic representation of terms and propositions.

Prove by using his four-term diagram the equivalence of the two following sets of positions:—(1) x is z; y is $\bar{x}\,z$; z is w; xz is y. (2) x is y; $\bar{x}y$ is z; z is xy; w is $\bar{x}y$.

X. State the rule for elimination and apply it to prove *Celarent*.

XI. How does the author show that the only tenable symbolic view is that there is no real distinction between the Hypothetical and Categorical forms of statement?

Is the obliteration of the distinction between categorical and hypothetical judgments a necessity of the author's scheme of symbolic procedure or of all symbolic schemes?

FRIDAY, 24TH JANUARY, 10 A.M. TO 1 P.M.

ETHICS.

I. What kind of proof is an ethical principle susceptible of ?

Discuss the following statement :—

"The perception of right and wrong is alone a sufficient principle of action."

II. 1. State the chief objections brought against Egoism ? Does Utilitarianism meet these objections ?

2. Prof. Sidgwick says that it is easier to reconcile Utilitarianism with Intuitionalism than Egoism. How ?

III. What exactly is the relation between Ethics and Sociology ?

Does the dependence of Ethics on the theory of a social organism necessitate any material modification of ethical principles ?

IV. Is it possible to apply the same moral standard to the conduct of a nation and to the conduct of an individual ? If not what points of community are there between the science of Ethics and that of Politics ?

V. The following objection has been raised with reference to the Utilitarian theory :—

"If tendency to produce happiness determine the rightness of an action, how can we rise above the agreeable and desirable to find philosophic warrant for a doctrine of personal obligation ?"

What attempts have been made to surmount this difficulty ? How far are they successful ?

VI. What are the different functions ascribed to Conscience when it is described as "infallible" as being "supreme in authority" ?

Prof. Calderwood says :—"Conscience is a faculty which, from its very nature, cannot be educated. Education, either in the sense of instruction or of training, is impossible" But he at the same time admits the possibility of "Moral Training." What exactly is the difference between "Moral Training" and the "Education of Conscience" ?

VII. State the chief characteristics of the evolutional theory of Ethics.

It has been said that the evolution theory effects a reconciliation between Experientialism and Utilitarianism. Could we go a little further and say that the doctrine of Evolution effects a union between the Utilitarian and Intuitional theory in Ethics ?

VIII. Criticize (referring to particular authors or schools of thought) the following statements :—

1. "Morality is an Institution of Society, maintained by the authority and punishments of society."

2. "I ask my consciousness what I do feel, and I find, indeed, that I feel (or am convinced) that I could, and even should, have chosen the other course if I had preferred it, that is, if I had liked it better ; but not that I could have chosen one course while I preferred the other."

3. "The sense of duty is transitory, and will diminish as fast as moralization increases."

FRIDAY, 24TH JANUARY, 2 TO 5 P.M.

HISTORY OF ETHICS.

Moral Philosophy in Greece previous to Aristotle, with a special study of Plato's Republic.

I. Characterise early Greek Philosophy in general, pointing out how it differed conspicuously from the Socratic and post-Socratic philosophy, and give some explanation of the difference.

II. It has been pointed out, that in three of the chief pre-Socratic philosophers, *viz.*, Pythagoras, Heraclitus, and Democritus, there are anticipations of the three leading post-Socratic ethical systems, respectively. Justify this; or state what you know of the ethical teaching of the three above-mentioned philosophers.

III Explain the statement that the Sophists, both as regards their profession and their doctrines, were a natural and necessary stage in the development of Greek history and thought. On what grounds were they attacked by Socrates and Plato, and on what grounds are they defended in modern times?

IV. J. S. Mill claims Socrates as a Utilitarian. Bentham, on the other hand, stigmatises Socrates as "talking nonsense under the pretence of teaching wisdom and morality," by which he means that he was an anti-utilitarian. Discuss the question so as to show which of the two is right.

V. Give your interpretation of the Socratic doctrine that *virtue is knowledge*. Sidgwick says that the complementary Socratic doctrine, that vice is caused by ignorance of virtue, is a nearly unanswerable deduction from two apparent truisms. Explain.

VI. Discuss the question whether Plato's aim in the *Republic* is mainly ethical or political. Name various imitations of, or parallels to, the Ideal State, that have appeared in literature, since Plato's time.

VII. State and criticise both Plato's psychological basis and the ethical superstructure he rears on it. By what arguments does Plato support his psychological and ethical analysis?

VIII. Continue Plato's parallel, between the Ideal State and the virtuous character, into one, between corruptions of the Ideal State and corresponding individual vices.

IX. What reasons does Plato assign for his antagonism to the poets? Notwithstanding this antagonism, Plato recommends the use of fictions, on occasion. Give an example.

X. State Plato's doctrine of the different grades of human knowledge and explain in connection therewith his simile of the cave.

XI. Point out what have been called the 'paradoxes' of Plato's *Republic*.

SATURDAY, 25TH JANUARY, 10 A.M. TO 1 P.M.

ETHICS.

Kant's Ethical Writings.

I. Examine the relation subsisting between Kant's practical and his speculative philosophy.

II. Compare the Kantian distinction between the intellectual or cogitable world and the sensible world, with the Platonic.

Point out and criticize the use made of the distinction by Kant in Ethics.

III. What replies does Kant give to the questions—What constitutes the rightness of an action? and Why ought I to do that which is right?

IV. How does Kant reconcile Autonomy of the will with the moral unity of all intelligents?

Compare the conception of man as a law unto himself as entertained by Butler and by Kant. Dr. Bain says that the "Autonomy of the Will" is a fallacy of the suppressed relative. Is this criticism sound?

V. Examine critically the connotation of the expressions "good" and "absolutely good" as applied by Kant to the Will. Is the conception of "an absolutely good will" fitted to be the *Summum Bonum*?

What are the characteristics of the will of man as a member of the world of sense and of the realm of intelligents respectively?

VI. What characteristics of Morality are expressed by the three forms of the Categorical Imperative?

VII. Kant lays down, says J. S. Mill, in his *Utilitarianism*, "an universal first principle as the origin and ground of moral obligation; it is this:—'So act, that the rule on which thou actest would admit of being adopted as a law by all rational beings.' But when he begins to deduce from this precept any of the actual duties of morality, he fails, almost grotesquely, to show that there would be any contradiction, any logical (not to say physical) impossibility, in the adoption by all rational beings of the most outrageously immoral rules of conduct All he shows is that the *consequences* of their universal adoption would be such as no one would choose to incur."

Criticize this passage with a view to show whether Mill has or has not correctly apprehended Kant's position with respect to the first formula of the categorical imperative.

VIII. What do you gather from Kant's writings as to the psychological nature of Moral Faculty?

What objections does Kant offer to the Moral Sense or Moral Feeling theory of Ethics advocated by Hutcheson and others? What is the psychological character, the origin, and the ethical function of what Kant calls the moral sense, feeling or sentiment?

IX. What is usually meant by "Conflict of duties?" Kant says that "a conflict of duties is inconceivable." On what ground?

X. The conception of God is held by Kant to be an "Idea" of the speculative and a "Postulate" of the practical reason. State clearly Kant's meaning, and compare his with the Christian conception of God. Does the Kantian doctrine of "postulation" satisfy the demands of Morality and Religion? How does Kant deal with what are called "duties to God"?

BRANCH V.

MONDAY, 20TH JANUARY, 10 A.M. TO 1 P.M.

ANCIENT HISTORY.

History of the Peloponnesian War.

I. 1. What, according to Thucydides, were the causes which led to the Peloponnesian war?

2. Indicate the periods into which it is divided, and the leading characteristics that each of them presents.

II. What part did Sitalkes, king of the Odrysians, play in the affairs of Greece during the Peloponnesian contest?

III. Draw a sketch of the Athenian political constitution and social life as existing in the time of Pericles.

IV. When, under whom, and with what success were the expeditions against (1) Melos, (2) Ætolia, (3) Naupactos, and (4) Sphacteria made?

V. 1. Give a brief account of the state of Sicily at the time of the Athenian expedition.

2. Draw a plan of Syracuse and the adjacent country, illustrating (*a*) the operations of the siege before the arrival of Gylippus, and (*b*) the respective positions of the Athenians and Syracusans when Demosthenes arrived.

VI. Adduce facts in support of the following statement:—

"The career of Alcibiades affords a memorable example of splendid qualities both for action and command, ruined and turned into instruments of mischief by the utter want of morality, public and private."

VII. Shew that Athens was conquered not by the Spartan Confederacy, but by the disloyalty of some Athenians bent upon ruining their political opponents

MONDAY, 20TH JANUARY, 2—5 P.M.

MEDIÆVAL HISTORY.

English History from A.D. 1066 *to* 1189.

I. How did the Feudal system as organized by William I. differ from the system prevailing on the Continent?

II. Describe the Church policy of William I., showing the effects it had on the relations between Church and State, and on the relations between the Church and State and Rome.

III. Give an account of the growth of Thegnship and of how the Thegn came to acquire territorial jurisdiction; also of the origin and growth of the Burh gemotes.

IV. What were the causes that led to the rebellion in 1075-6? Why was it unsuccessful?

V. What were the judicial functions of the Curia Regis in the reign of Henry I., and what additions to its power were made in the reign of Henry II.?

VI. What was the policy persistently pursued by Henry II. in the Government of England? Illustrate your answer by giving acts passed and measures adopted by him to secure his end.

VII. What were the causes that led to the league against Henry II. in 1173? Who were the principal members of the league?

VIII. Contrast the characters and policies of Anselem and Lanfranc.

IX. Write brief historical notes on Robert of Belesme, Waltheof, Hereward, Boc-land, Heriot, Constitutions of Clarendon.

TUESDAY, 21ST JANUARY, 10 A.M. TO 1 P.M.

MODERN HISTORY.

The Turks in Europe, A.D. 1453 *to* 1683.

I. Draw a map showing the extent of the Ottoman dominions in Europe at the conclusion of the treaty of Zurawna. Mark by dotted lines the provinces acquired subsequent to the commencement of your period, and state, in as few words as possible, how and when each was won

II. State briefly what you know of the following persons:—*Dragut, Pialé, Ahmed-Kedük, Mohammed-Sokolli, John Capistran, Bragadino, Fuzuli, Jahia.*

III How do you account for the rapid extension of the Ottoman domination in Europe, for its enduring character, and for the continuous successes obtained by the Turks against the Christian Powers during the greater part of your period?

IV. What was the *tribute of Christian children?* On whom and in what manner was it levied, and what was done with the children thus obtained? When and why was the tribute put a stop to? Name some of the most eminent of the *tribute-children.*

V. Give some account of the administration of Chios by the *Maona* of the Giustiniani, and of the relations of the Maona with the Porte. When and by whom was the island annexed to the Ottoman Empire?

VI. Explain the following terms:—*beylerbey, fetva, vakouf, sanjak, ulema, hatti-scherif, reis effendi, haratch, kadiasker.*

VII. Give a short sketch of the Turkish military system in the reign of Suleiman the Great.

VIII. What were the relations of the Ottoman Empire with Russia during your period?

IX. Write a brief biographical sketch of *one* of the following persons:—Scanderbeg, Barbarossa, Ahmed Kiuprili.

X. What were *the capitulations?* When and with whom were the earliest made? What is the date of the first capitulations with England?

TUESDAY, 21ST JANUARY, 2 TO 5 P.M.

INDIAN HISTORY.

History of the East India Company in India, A.D. 1600 *to* 1858.

I. Narrate briefly the events which led to the formation of the

United Company of Merchants trading to the East Indies, and the award of Godolphin.

II. Give a sketch of the constitution of the Company as it was in the beginning of the 18th century.

III. What settlements did the Company own in India about the year 1746? Give a brief account of its trade at that time.

IV. Mention and comment on the leading provisions of the Regulating Act of 1773.

V. Sketch briefly the history of Fox's East India Bills and Pitt's East India Bill.

VI. Describe in some detail the reforms effected by Clive in the Company's administration of India on his arrival in 1765.

VII. Compare the Zemindari system of Bengal with the Riotwari system of Madras, and comment on the following observation of James Mill with reference to the former:—'The legislators (of India) were English aristocrats; and aristocratical prejudices prevailed, to the great detriment of the agricultural prosperity of the country!

VIII. What changes in the privileges of the Company were introduced by the Charters of 1813 and 1833? How was the administration of the Company affected thereby?

IX. Mention the leading events in the administration of Lord Dalhousie, with your estimate of their effects on the well-being of India.

WEDNESDAY, 22ND JANUARY, 10 A.M. TO 1 P.M.

SPECIAL HISTORICAL SUBJECT.

England from A.D. 1644 to the death of Oliver Cromwell.

I. State in detail the circumstances under which the Self-denying Ordinance was passed. How did it influence the formation of the New Model? By what means did Cromwell himself retain his military command in spite of the Ordinance?

II. Discuss the attitude of Cromwell towards the King, adducing any reasons which may account for his change of attitude in 1647-48

III. Mr. Frederick Harrison says:—"By the execution of the King the whole situation was changed. What had been a rebellion under legal forms became a real Revolution; in the room of the Parliament men saw a Council of State; in the room of the Monarchy, a Commonwealth; and Cromwell was left the one commanding person on either side." Discuss this statement, with special reference to the constitutional questions involved.

IV. What were Cromwell's views as to the relations of the executive and the legislature and their respective functions? How far are these views recognised to-day in the constitutions of Great Britain and the United States respectively?

V. Cromwell, in his great battles, for the most part gained the victory by the adoption of one particular set of tactics. State what these tactics were, illustrating your statement by a particular account and plan of *one* battle.

VI. How did Cromwell himself excuse the massacres of Drogheda

and Wexford ? Test the validity of these excuses by references to the facts.

VII. 1. What did Cromwell mean by *Fundamentals*, and what would be the modern synonym for the word ? Enumerate, as nearly as you can in his own words, the chief fundamentals.

2. What were the *Ordinances ?* Under what circumstances were they issued ?

VIII. 1. Write short notes on (*a*) the Clubmen, (*b*) Fifth Monarchy men, (*c*) Agitators, (*d*) Malignants.

2. Write short biographies (specially bearing on their public life) of (*a*) Vane, (*b*) Blake, (*c*) Whitelocke, (*d*) Harrison.

IX. State the historical circumstances which Milton had in his mind when writing the following passages :—

1. New *Presbyter* is but old *Priest* writ large.
2. The false North displays
   Her broken league to miss their serpent wings.
3. Peace hath her victories
   No less renowned than War.
4. Avenge, O Lord, thy slaughtered saints, whose bones
   Lie scattered on the Alpine mountains cold.

THURSDAY, 23RD JANUARY, 10 A.M. TO 1 P.M.

EPIGRAPHY.

I. Give your opinion regarding the origin and date of the introduction of writing into India, and discuss the *origin* of the alphabet employed in the earliest inscriptions known.

II. Trace the origin and gradual development of the Telugu and Canarese alphabets, and taking two or three typical letters show the various transitional forms through which they have passed. During what period do they appear to have become merged in one ?

III. State what you know regarding the origin, employment, approximate date, and later development of the following :—Gupta, Grantha, Cera.

IV. State any differences that occur in the forms of plate grants in Northern and Southern India. From what date approximately have seals been attached to royal grants, and what devices do those of the chief dynasties respectively bear ? Quote any changes that have taken place in the forms of seals at different periods in Southern India.

V. Describe accurately the method of calculation employed in the Hejira system, and reduce to the year of the Christian Era A.H. 200. What is meant by the 'Faslí', 'Jalús' and 'Tarikh Iláhí' Eras, and by whom were they introduced ?

VI. Write a report on the seal of which the accompanying is a photograph.

THURSDAY, 23RD JANUARY, 2—5 P.M.

INTERNATIONAL LAW.

I. Sir H. S. Maine says "in order that these chapters of Inter-

national Law" (those which refer to *dominion*) "may be capable of application, it is necessary that sovereigns should be related to each other like the members of a group of Roman proprietors." Explain this.

II. Give the names and dates of the principal works of Grotius; show how the circumstances of the time influenced their character; and estimate their influence on the development of International Law.

III. Describe the circumstances which led to the formation of the armed neutralities of 1780 and 1800. Say what doctrines of International Law were advocated by the allied powers in each case, and what is the present state of the law on each of the disputed points.

IV. Discuss the *legal* propriety of the British Government's at once recognising the newly established Brazilian Republic. Refer by way of demonstration to former cases of recognition.

V. Trace the history of the law relating to the duties of neutral states during the last two centuries.

VI. To what extent is the right of violence against the persons of enemies limited?

VII. What is the relation of treaties to International Law?

VIII. Make a classification of the persons ordinarily to be found within the territories of a State in time of peace so as to show (1) what classes are, and what are not, subjects of the State, and (2) the extent to which each of the latter is subject to the State Government. Mention any disagreements in the practices of different States.

FRIDAY, 24TH JANUARY, 10 A.M. TO 1 P.M.

POLITICAL ECONOMY.

I. Examine the statement that Political Economy is partly an inductive, partly a deductive science.

II. What are the causes which determine the money wages at any particular place? Illustrate your answer by reference to the rates of wages in different countries.

III. "The demand for other things is for so much and no more, but there is always a demand for as much money as can be got." —*Mill.* "The quantity of gold and silver is in every country limited by the use which there is for those metals."—*Adam Smith.* Explain and if possible reconcile these two statements.

IV. If a large portion of Madras were destroyed by fire, what would be the effect upon (1) the building trade, (2) the country generally?

V. Explain the doctrine that there is a tendency in old countries to a fall in the rate of profit, and that the efflux of capital to new countries tends to arrest or retard it.

VI. According to Ricardo high profits involve low wages. Do the low wages in India involve proportionally high profits or not?

VII. Rents have fallen very greatly in England during recent years. Has the wealth of the country been thereby necessarily diminished?

VIII. What would be the immediate and ultimate effect upon rents of a sudden improvement in the methods of cultivation?

IX State the Malthusian doctrine of population. Show how modern

emigration from European countries affects the truth and importance of it.

X. Compare 'unproductive consumption,' as defined and illustrated by Mill, with 'waste.'

FRIDAY, 24TH JANUARY, 2—5 P.M.

POLITICAL ECONOMY.

I. Discuss the question whether the demand for money (using that term to denote any universally acceptable medium of exchange) bears any necessary relation to (1) the gross wealth of the community using it, or (2) the activity of production in the community.

II. Bishop Berkeley asked—

1. "Whether power to command the industry of others (*i.e.* "credit) be not real wealth? And whether money be not, in truth, "tickets or tokens for recording and conveying such power; and "whether it be of consequence what material the tickets are made of?"

2. "Whether all circulation be not alike a circulation of "credit, whatsoever medium, metal or paper, is employed; and "whether gold be any more than credit for so much power?"

How would you answer these questions? What answers would be given to them by Smith and Mill?

III. Could any one who gives an affirmative answer to Bishop Berkeley's questions consistently condemn the method of meeting national liabilities by raising the denomination of the coinage? Compare the effects of this step with those of an adulteration of the metal.

IV. Ricardo remarks—"While the State alone coins, it can, by limiting the quantity of coin, raise it to any conceivable value." Within what limits is this statement true?

As a supposed application of this principle it has been proposed that the Indian Government should limit the coinage of silver in the belief that the rupee might thus be restored to par Point out the fallacy in this proposal.

V. 1 Give a brief account of the origin of Banking.

2 "A Bank is a manufactory of credit." "A Banker is a trader whose business is to buy money and debts by creating other debts."

Examine these definitions and explain clearly the modern banking functions.

VI. 1. Explain and examine the Physiocratic theory of taxation.

2. What circumstances in Adam Smith's view render the interest of money a less proper subject of direct taxation than the rent of land?

VII. 1. To what extent is English taxation at present regulated upon general principles?

2. What attempts have been made in England during the last two centuries to introduce the principle of graduation of taxes to means?

VIII "The raising the supplies for a war within the year by means "of additional taxes would add increased efficacy to industry and "commerce . . . As soon as the period of extraordinary exertion

"had ceased, the taxes imposed to meet it would also cease. Prices "would fall back to their natural level; and industry relieved from "the burdens of the war, would spring forward with renewed "energy. Had we [England] always acted on this system . . . we "should have been more powerful; more able to resist any attacks "on our own freedom and independence; and to interpose with "more effect in defence of the liberties of others."—*M'Culloch.*

Do you accept this view? If so, support it by argument. If you do not accept it, then point out clearly the influence which, in your opinion, the funding system has had upon the growth of English wealth and power.

SATURDAY, 25TH JANUARY, 10 A.M. TO 1 P.M.

ESSAY ON POLITICAL ECONOMY.

Write an essay on any one of the following subjects, discussing the question from an economic point of view:—

1. The system of hereditary caste obtaining in India.
2. The nationalization of the land
3. Compulsory free education

BRANCH VI.

MONDAY, 20TH JANUARY, 10 A.M. TO 1 P.M.

COMPARATIVE PHILOLOGY.

I. Point out the relation of the Science of Language to Logic

II. Make a list of the agglutinative *families* of speech, with their chief *branches*; and remark briefly on the literary culture of any one of these families.

III. 1. What discovery has led to the statement that "Sanskrit has been dethroned"?

2. Mention one error of "the Sanskritists" which has been exposed by a scientific study of the languages of savage tribes.

IV. 1. Give the different classes of exceptions to Grimm's Law.

2. Account for the fact that, in the *Mediæ* (soft) group, the original sound B is inserted in the general scheme of this law without illustration, by both Bopp and Max Müller.

3. What English words correspond, by this law, to the following Sanskrit words:—(g)hyas, ganas, dama, tanus, siras?

4. Mention any branch of the Ural Altaic family of languages that exhibits a "Lautverschiebung," and give the name of the discoverer of this Law.

V. 1. What is meant by—(*a*) the Morphology of Speech, and (*b*) the Metaphysics of Language?

2. Trace the history of the Relative Clause.

3. Mention *four* cases in which the phonology of one language has been influenced by intercourse with another; and two cases in which it has been influenced by tribal custom.

VI. 1. Who were the pioneers of Comparative Syntax ?

2. Mention some of the leading points of agreement and difference brought to light by this branch of linguistic Science, in the syntactical contrivances of the various Aryan tongues.

VII. 1. Give clearly the meaning of *Swarabhakti ;* and point out some of the changes this process has produced in languages, at the *beginning* of words.

2. Explain what is meant by (*a*) regressive, (*b*) progressive, (*c*) reciprocal, (*d*) complete, and (*e*) partial, assimilation ; and give examples of each.

VIII. Examine the influence of analogy in language as affecting (1) accent, (2) quantity, (3) pronunciation.

IX. Pott has attempted to determine the laws, and distinguish the causes that produce change in Sematology. Enumerate his classification, with examples under each head, and show how it differs from that of Whitney.

X. Write full philological notes on :—furbelow, quick, wig, tres, credo.

XI. What do you know of the theories held about the origin of gender ? State Sayce's conclusions on this subject.

BRANCH VI. (ENGLISH.)

MONDAY, 20TH JANUARY, 2 TO 5 P.M.

HISTORY OF THE ENGLISH LANGUAGE.

I. 1. How were the tooth-sounds represented in the older English alphabet ? Trace the history of these symbols.

2. Write a short history of the symbol *j*, and state how its phonetic value was represented previous to its general introduction.

3. What were the phonetic values of the *long* vowels *á, é, í, ó, ú,* in Anglo-Saxon ? Give examples showing how these sounds have been replaced.

4. Remark in explanation of the final *e* in *stone, house, one.*

II. 1. Account for the existence of the following doublets :—*ward, guard ; dike, ditch ; inch, ounce ; rear, raise.*

2. Remark upon the origin or value of the italicised parts in :—*a*down, *a*long, *a*do, *a*ware ; hat*red*, hund*red* ; righte*ous* ; for*mer*.

3. Discuss *one* of the following statements :—

(*a*) "We retain a Tudor system of symbols with a Victorian pronunciation for which it is ill-fitted."

(*b*) "It is clear that if a consistent and etymological spelling had become fixed in the Indo-Germanic languages, there would have been no Grimm's Law, no etymology, in short, no philology at all possible."

III. 1. Explain and illustrate Verner's Law.

2. Trace the following words to their original form, referring in explanation to phonological laws or principles involved :—*stirrup, umpire, lobster, nugget.*

3. Write full historical notes on *mob, plunder, tawdry, by-law.*

IV. To what period and to what locality would you assign the following extracts? Give fully your reasons:—

1. Þe ramm wass offredd forr þe preost
to clennsenn himm off sinne,
⁊ forr þe bisscopp wass þe callf
offredd o þeȝȝre wise,
⁊ forr þe follc wass offredd bucc,
Drihhtin to lofe ⁊ wurrþe,
Þatt he þeȝȝm purrh hiss mildherrtleȝȝe
forrȝæfe þeȝȝre gilltess.

2. His mynde es short when he oght pynkes,
His sight wax dym, þat he has,
His bax wax croked; stoupand he gas,
Fyngers and taes, fote and hande,
Alle his touches er tremblande.
His werkes for-worþes þat he bygynnes:
His hare moutes, his eghen rynnes.

3. And now aftir þe destruccioun of the rewme, þe peple ben glad for to resorte and turne aȝen into þe catholik and general faith and loore of þe chirche and in her pouerte bildiþ up aȝen what was þrowun doun.

4. Vtterance also and language is giuen by nature to man for perſuaſion of others, and aide of them ſelves, I mean the first ability to ſpeake. For ſpeach it ſelf is artificiall and made by man, and the more pleaſing it is, the more it preuaileth to ſuch purpoſe as it is intended for: but ſpeech by meeter is a kind of vtterance, more cleanly couched and more delicate to the eare than proſe is.

V. 1. Explain Mr Earle's meaning when he says that "now for the second time in history it was on a turn of the balance whether Britain should produce nationality of the Romanesque or of the Gothic type."

2. Briefly indicate the importance of the publication of the English Bible of 1611 in relation to the history of the language.

3. What have been the chief reactions in the characteristics of the literary language from 1600 down to the present time, and with what names are these reactions to be connected?

VI. 1. Write out the declension of the Pronoun of the Third Person, also the Present Indicative of the verb *to be*, in Anglo-Saxon. Account for the principal variations now apparent.

2. Construct a scheme of the tenses of a modern English

verb, remarking on the origin and appropriateness of the terminology usually employed.

VII. Discuss, in the light of Logic, or the History of the English Language, the grammatical construction of the italicised parts in the following :—

1. He was blamed for *having failed* to act energetically.
2. Foul subornation is predominant and equity *exiled your highness' land.*
3. Women are angels, *wooing.*
4. *There* is no virtue like necessity.
5. It is you who *say* so.

TUESDAY, 21ST JANUARY, 10 A.M TO 1 P.M.

TEXT-BOOKS.

Sweet—*Anglo-Saxon Reader*; Chaucer—*The Knightes Tale, The Squieres Tale, The Man of Lawes Tale*; Ben Jonson—*The Alchemist.*

I. I. Write a short introductory chapter (as for a beginner) on the peculiarities of Anglo-Saxon Grammar; in *Nouns*, specify the terminations, etc., indicating gender, and define 'strong and weak' nouns; in *Pronouns*, give the interrogatives; in *Verbs*, remark on the conjugation of strong and weak verbs, with an example of the present indicative of each.

2. What was the dative plural termination of nouns?
3. Compare mæst (most)?
4. What is the plural of maniga (many)?
5. Distinguish between gé bindeth and binde gé.
6. Explain and give examples of the terminations *scipe, mælum, feald, ig,* and *lic*, and give the modern form of each with an example.

II. Give a verbatim translation of

1. Ðá ðæt gafol gelæst wæs, and friðáðas ásworene wæron, ðá tóférde se here wíde swá hé ær gegaderod wæs. Ðá bugon tó ðám cynge of ðám here síf and feówertig scipa, and him behéton ðæt hí woldon ðisne eard healdan, and hé hí fédan sceolde and scrydan.

2. Satan maðelode, sorgiende spræc,
se ðe helle forð healdan sceolde,
giéman ðæs grundes : wæs ær Godes engel
hwít on heofne, éð hine his hyge forspeón
and his ofermétto ealra swíðost,
ðæt hé ne wolde wereda Dryhtnes
word wurðian. Weóll him oninnan
hyge ymb his heortan, hát wæs him útan
wráðlic wíte; he ðá worde cwæð :
'Is ðes enga stede ungelíc swíðe

ðám óðrum ðe wé ǽr cúðon,
heán ǫn heofonríce, ðe mé mín hearra ǫnlág,
ðeáh wé hine for ðám Alwealdan ágan ne móston,
rómigan úres ríces.

III. 1. Write a note on the language and metre on Chaucer with illustrations from the Man of Lawes Tale and the Squieres Tale.

2. Arrange the following in verse:—"And forth he rood to Thebes ward, and al his hoost bysyde; no nerre Athenes wolde he go ne ryde, ne take his eese fully half a day."

IV. 1. Explain by close paraphrase:—

(*a*) Hem for to streepe of herneys and of wede,
The pilours diden besinesse and cure.

(*b*) Soth is that thurgh womannes eggement
Mankynd was lorn.

(*c*) But now to purpos let us turne agayn;
Thise marchants ha don fraught hir shippes newe.

2. Explain the allusions in the following:—

(*a*) For after *Mars* he serveth now *Diane*.

(*b*) Full pitously *Lucyna* gan sche call.

(*c*) The hors that hadde winges for to flee;
Or elles it was the Grekes hors Synon.

3. How has each of the following words changed in meaning or use since Chaucer's day:—by and by, disease, silly, starve, knave, lewedness, drench, and annoy.

4. How does Chaucer express:—

(*a*) He would not have any ransom.

(*b*) A thief that had *renounced our belief*.

5. Derive—coverchief; peregrine; grain (dyed in grain).

V. 1. What is Milton's reference to the *Squieres Tale?*

2. Quote a well-known proverbial saying from each of the three *Tales*.

3. At last he rose and twitched his mantle *blue*. *Lycidas*.

In the *Squieres Tale* there is a reference to 'velvets blue,' and why that colour is used,—which may explain 'the mantle blue' in *Lycidas*. Refer to it.

4. In Dryden's version of *The Knightes Tale* he has the following absurdly incorrect rendering:—

For this advantage Age from Youth hath won,
As not to be outridden but outrun.

What is the word that Dryden has misinterpreted?

5. What is Chaucer's epithet for the lark?

VI. 1. Write a very brief *Argument* for the *Alchemist*.

2. Write brief notes on:—(*a*) He can court his mistress out of Ovid. (*b*) My brace of little John Leydens. (*c*) Never since eighty-eight could I abide them. (*d*) Apicius' diet. (*e*) An excellent Paracelsian. (*f*) Abused. (*g*) Resolved. (*h*) Sisyphus.

TUESDAY, 21ST JANUARY, 2 TO 5 P.M.

TEXT-BOOKS.

Milton—*Lycidas*, *Sonnets*; Byron—*English Bards and Scotch Reviewers*, *Childe Harold*; Shelley—*Adonais*, *Prometheus Unbound*; Tennyson—*In Memoriam*; De Quincey—*The Cæsars*, *Charles Lamb*, *Oliver Goldsmith*.

I. Write a short note on Pastoralism and its influence on English Literature. How does its pastoral form affect (1) the expression of personal feeling, (2) the moral and religious teaching of *Lycidas*? To what extent does the poem pass beyond the range of the ordinary pastoral? Are there any traces of Pastoralism in *Adonais*?

II. Give a short sketch of the friend in memory of whom *Lycidas* was written, illustrating by quotations from the poem.

Give the substance of the following Sonnets, with a brief account of the circumstances that called them forth:—"Captain or Colonel or Knight-in-arms," "I did but prompt the age to quit their clogs."

III. Write critical and explanatory notes on—"Blind months," "Clip their phylacteries," "Like to that sanguine flower inscribed with woe."

IV. Write a note on Byron's use of archaisms, and their effect on the passages in which they occur. What is the general plan of *Childe Harold* and to what extent may the poem be regarded as autobiographical?

V. In what terms does Shelley refer to *English Bards and Scotch Reviewers*? To what school of poetry does Byron, in this poem, profess adherence? How far does his practice correspond with this profession? Explain with criticism, "For nature then an English audience knew," and the succeeding lines.

VI. Compare the representations of University life given by Byron and Tennyson. How does Byron speak of the French Revolution? Refer to what is said on this subject in *In Memoriam*.

VII. Give a sketch of the character of Jupiter as delineated *Promtheus Unbound*. In what respects does Shelley differ from Æschylus in his conception of (1) the nature of the supreme power that underlies all things, (2) the character of Prometheus.

How far may such differences be regarded as due to the influence of Christian ideals? Why does Jupiter torture Prometheus and on what conditions does he offer him liberty?

VIII. "Death is the veil which those who live call life:
They sleep and it is lifted:"

How is the same thought expressed in *Adonais*?

"Thy voice is on the rolling air,
I here thee where the waters run."

Refer to a similar passage in *Adonais*, and compare the teaching of *Adonais* as to the state of the dead, with that of *In Memoriam*.

IX. Write a note on (1) Tennyson's acquaintance with plant and insect life, (2) his distinction between knowledge and wisdom, (3) his method of solving doubts as to spiritual truths. In your answer refer to passages in *In Memoriam*.

X. Explain the following passages :—

1. "The spouseless Adriatic mourns her Lord."
2. "Or where the kneeling hamlet drains
   The chalice of the grapes of God."
3. "Before
   God shuts the door-ways of his head."
4. "Shadowing down the horned flood."
5. "And over those ethereal eyes
   The bar of Michael Angelo."

XI. Explain with reference to the context—"He compelled her to exchange the imperfect inchoate condition of a mere *femina* for the perfection of a *mulier*." What were De Quincey's views as to the time when the empire began to decline? How far are these views consistent with what he says about the establishment of the empire?

XII. What are De Quincey's views regarding (1) the condition of the literary world at the time when Goldsmith wrote, (2) the homage paid by France to literature?

WEDNESDAY, 22ND JANUARY, 10 A.M. TO 1 P.M.

ESSAY.

Write an essay on *one* of the following subjects :—

1. The influence of the Renaissance on English Literature.
2. The influence of the French Revolution on English Literature.

THURSDAY, 23RD JANUARY, 10 A.M. TO 1 P.M.

TEXT-BOOKS.

Shakspere—*The Taming of the Shrew, The Merry Wives of Windsor, Richard III*; Massinger—*The Fatal Dowry, A New Way to pay old Debts.*

I. 1. Schlegel says of Richard III, "Richard . . . is a villain with full consciousness." Expand this remark, and illustrate it from the play.

2. Write a note, as for a Dramatic Lexicon, on the character of Falstaff.

3. Write a similar note on the character of Marrall.

4. Discuss the names of the *Dramatis Personæ* of *A New Way to pay old Debts* with reference to the propriety of shadowing forth the nature of each character in his name.

5. Why was the play called *The Fatal Dowry?* What was the Dowry? and how was it Fatal?

II. 1. The courtship scene between Richard and Lady Anne, in *Richard III*, has been praised as an admirable specimen of rhetoric. Examine the truth of this.

2. CRAIK says of Massinger, "He is a very eloquent writer . . . He could rise . . . to a vivid conception of a character moved by

some single aim or passion . . . In the conduct of his plots, also, he generally displays much skill."

HAZLITT says, "Massinger is harsh and crabbed . . . I find little but a display of great strength or subtlety of understanding. . . and perversity of will . . . The Muses should attract by grace or dignity of mien. Massinger makes an impression by hardness and repulsiveness of manner."

ANGUS says, "Massinger's sketches of human nature resemble Jonson's in their coarseness and depravity"

T. B. SHAW says, "The qualities which distinguish this noble writer are an extraordinary dignity and elevation of moral sentiment, a singular power of delineating the sorrows of pure and lofty minds exposed to unmerited suffering, cast down but not humiliated by misfortune. In these lofty delineations it is impossible not to trace the reflection of Massinger's high but melancholy spirit. Female purity and devotion he has painted with great skill; and his plays exhibit many scenes in which he has ventured to sound the mysteries of the deepest passions, as in the *Fatal Dowry* . . . ."

Reconcile, if you can, these discordant views. Which approves itself to your mind? Illustrate your answer by reference to the two plays by Massinger set for this examination.

3. Write a criticism on the '*Induction*' of *The Taming of the Shrew* with reference (*a*) to its dramatic value, and (*b*) to the characters.

4. Is *The Merry Wives of Windsor* one of Shakspere's late or one of his early plays? Is there any anachronism in it? What is the tradition as to the origin of the play?

III. 1. Show your acquaintance with any *two* of the following passages:—

(*a*) The ghost scene in *Richard III.*

(*b*) The scene in which Mrs. Page questions Sir Hugh Evans about her education.

(*c*) Gremio's description of the marriage of Katharine and Petruchio.

(*d*) The conversation between Justice Greedy and Furnace.

(*e*) The funeral scene in *The Fatal Dowry.*

2. To whom, and how, does Sir Giles Overreach display his true character?

3. What was the charge Allworth left for his son? Can you quote any parallel passage?

4. Name the ingredients of the elixir Furnace gave to Allworth.

5. Whence are the following two lines taken?

"No pain is due to lovers' perjury:
If Jove himself laughs at it, so will I."

Can you quote any parallel passage?

IV. 1. Write short notes on the following passages:—

(*a*) ". . those memorable overthrows
At Granson, Morat, Nancy . . ."

(*b*) "That his dear father might interment have,
See, the young son enter'd a lively grave!"

(*c*) ". . . . . my hand hissing,
If I scape the halter, with the letter R
Printed upon it . . ."

(*d*) I'll pheese you, in faith."

(*e*) "Another way I have to man my haggard."

(*f*) "And from the cross-row plucks the letter G."

(*g*) "Good time of day unto my gracious lord!"

(*h*) "What lawful quest have given their verdict up . . ."

(*j*) "Convey, the wise it call: steal! foh; a fico for the phrase!"

(*k*) "Ford's a knave, and I will aggravate his style."

2. Who is the speaker in (*a*), (*c*), (*e*), (*f*), (*h*) and (*j*) of the last question?

3. Explain the italicised words in the following passage. What emendation of those words has been lately suggested? Do you think the emendation good? Give reasons for your answer. "Let him die . . . I will bring thee where mistress Anne Page is, at a farm-house a-feasting; and thou shalt woo her; *Cried game*; said I well?"

4. Explain the following words or phrases: *Abram-men; a Cain-coloured beard; a copatain hat; come cut and long-tail; cowl-staff; diaper; eyas-musket; gallimaufry; gourd and fullam; hilding; meacock; murrion; red-lattice phrases; ronyon; sealed quarts; truckle bed.*

THURSDAY, 23RD JANUARY, 2 TO 5 P.M.

TEXT-BOOKS.

Burke—*Letters on a Regicide Peace*; Hallam—*The Middle Ages, Chap. IX*; Gibbon—*The Decline and Fall, Chap. LXXI*; Addison—*The "Coverley" Essays*; Johnson—*Lives of Dryden and Pope.*

I. 1. State concisely Burke's leading argument against the peace, and examine its validity in the light of subsequent events.

2. For what purpose does Burke introduce into his argument (*a*) the war of the Spanish Succession, (*b*) the condition of the country at the time he writes?

II. 1. "Conscientiousness, accuracy, judgment, and enormous reading" are said to be amongst Hallam's leading characteristics Adduce evidence in support of this estimate, and mention any exceptions you may have noted.

2. Discuss the advantages and disadvantages of the system of 'Chivalry,' and criticise Hallam's views on the subject.

3. In what connection is the following remark made? Explain fully the allusion contained in it. "An early instance of that conflicting selfishness of belligerents and neutrals, which was destined to aggravate the animosities and misfortunes of our own time."

III. 1. What led Gibbon to write the 'Decline and Fall'? Give some account of the progress and completion of his design.

2. Enumerate the chief agencies in the destruction of the monuments of ancient Rome, and estimate their relative importance.

3. Explain the following extract:—"He was humbled rather than elated by the discovery, that except his friend Rienzi and one of the Colonna, a stranger of the Rhone was more conversant with these antiquities than the nobles and natives of the metropolis."

4. In what sense now obsolete does Hallam use the following words:—monkery, vulgar, staple, authentic, guildhall.

IV. 1. With what moral purpose was the Spectator originated, and how is it brought into prominence in the "Coverley Essays"? What supplies the place of papers such as the Spectator, in the literature of the present day?

2. Sketch the character of Sir Roger. Who is supposed to have been the original of this character?

3. Give the Spectator's views on party-government. How far do you consider that the history of party-government in England since his time bears them out?

V. 1. "Clear your mind of cant" is considered by Mr. Leslie Stephen to be the great lesson inculcated by Johnson. Exemplify this from Johnson's "Life of Pope."

2. Which of Dryden's poems were composed with a religious, and which with a political, object? Give some account of any one of these.

VI. Point out the characteristics of Johnson's style exhibited in the following extracts:—

1. "*The Dialogue on the Drama* was one of his first essays of "criticism, written when he was yet a timorous candidate for repu-"tation, and therefore laboured with that diligence which he might "allow himself somewhat to remit, when his name gave sanction to "his positions, and his awe of the public was abated, partly by cus-"tom, and partly by success. It will not be easy to find, in all the "opulence of our language, a treatise so artfully variegated with "successive representations of opposite probabilities, so enlivened "with imagery, so brightened with illustrations."

2. "Of genius, that power which constitutes a poet; that "quality without which judgment is cold, and knowledge is inert, "that energy which collects, combines, amplifies, and animates; the "superiority must, with some hesitation, be allowed to Dryden. It "is not to be inferred, that of this poetical vigour, Pope had only a "little, because Dryden had more; for every other writer since "Milton must give place to Pope; and even of Dryden it must be "said, that, if he has brighter paragraphs, he has not better poems. "Dryden's performances were always hasty, either excited by some "external occasion, or extorted by domestic necessity, he composed "without consideration, and published without correction. What "his mind could supply at call, or gather in one excursion, was all "that he sought, and all that he gave. The dilatory caution of Pope "enabled him to condense his sentiments, to multiply his images, "and to accumulate all that study might produce, or chance might "supply. If the flights of Dryden therefore are higher, Pope con-"tinues longer on the wing. If of Dryden's fire the blaze is brighter, "of Pope's the heat is more regular and constant. Dryden often "surpasses expectation, and Pope never falls below it."

FRIDAY, 24TH JANUARY, 10 A.M. TO 1 P.M.

URDU: TRANSLATION.

Translate into English:—

(۱) اس مین کچھہ کلام نہین کہ بیکن کے قوای دماغي زبردست اور مختلف تھے لیکن اسکي عظیم اور لازوال شہرت کي خاص وجہ یہ ہے کہ ان سب قوتون کو بذریعۂ فہم عام کے کام مین لایا - اسکا ان ذلیل چیزون کو پسند کرنا جو مفید ہون اور نیک و بد کے عام خیالات کے ساتھہ ہمدردي کرنا اور اس ہمدردي کا کشادہ دلي کے ساتھہ اقرار و اظہار کرنا یہي باتین اسکی خیالات کے تخصیصات مین سے ہین - اسکے طریقہ مین ریا و فریب کا نام نتھا - اسکے پاس توتی ہدیون کے جوڑنے کیواسطے کوئي مرہم و روغن نتھا - وہ کوئي نازک خیالان نہین رکھتا تھا اور نہ ایسی دلائل و براہین رکھتا تھا جنسے لوگون کوخلاف قیاس باتون کي ترغیب دیسکے - اسکو معلوم تھا کہ آدمي اور حکما لوگ بھي مثل اور آدمیون کے زندگي صحت آرام عزت امن اور دوستون کي صحبت کو واقعي پسند کرتے ہین اور موت بیماري درد اِفلاس ذلت خطرہ اور اعزا کي مفارقت کو واقعي ناپسند کرتے ہین - اسکو معلوم تھا کہ گو مذہب ان سب مین اصلاح کرتا ہے اور اعتدال بخشتا ہے مگر ایسا بہت کم اتفاق ہوتا ہے کہ ان خیالات کو بیخ و بنیاد سے دور کردے اور نہ اسنے ان خیالات سے رنج و راحت کا یک لخت معدوم ہوجانا انسانون کے واسطے ضروري خیال کیا - سنیکا کي سي نازک خیالیون یا کرسپس کے سے دلائل و براہین سے انکے دور کردینے کا منصوبہ بیکن کے دماغ کے مناسب نتھا - وہ اس باتکو سمجھہ نہ سکا کہ نامون کے بدلدینے مین جبکہ نفس شی کا تغیر محال ہو کونسي عقلمندي ہے - یہ بات کہنے مین کہ کور چشمي بھوک وجع مفاصل اور عذاب شکنجہ مصیبتین نہین ہین اور اس بات سے انکار کرنے مین نہ تندرستي دولتمندي اور امن اچھي چیزین ہین کونسي خوبي ہی *

(۲) گرگین نے کہا مین نے سنا ہے کہ یہان سے قریب ایک دشت ہے کہ ہرطرف اسکی سبزہ زار ہے - باغ سے زیادہ بہار ہے - چشمہاے سرد و شیربن روان ہین - جانوران آبي قاز قرقرے بط مرغابي بران ہین - کہین نیل گائي باڑے ہرن بھرتے ہین - بھولونکی مہک سے مست ہو ہوکے گرتے ہین - کہین کبک و دراج چکور ہین - کسي جا بپیہا ہربل مور ہین - کسیطرف جو درخت لہلہے ہین سوہان بلبل کے چہچہے ہین - سبز مخمل کا فرش فراش صبا نے کوسون تک بچھا یا ہے - جوش بہار نے عجب عجب غنچہ و گل کھلا یا ہے - اور شب ماہ تو خدا کي پناہ - اس صحرا کا یہ حال ہونا ہے بشر تو کیا فرشتہ پر نہین مار سکتا - ہوا کا گذر محال ہونا ہے - وہ راتین عجب دن دکھاتے ہین - جہان کے کیفیتین نظر آتی ہین - میزہ دختر افراسیاب غیرت آفتاب چاندني کے سیر کو اس جا آتي ہے - زمین آسمان کچھ اور نظر آتا ہے - دوني فضا ہو جاتي ہے - ایک تو خود بیمثل روزگار ہے - مشہور ہر شہر و دیار ہے جہان - نادیدہ مذکور سنکے اسکا طلبگار ہے - دوسرے ہزار ہا پري پیکر گل اندام - فتنہ خرام - غنچہ دہن - غرق دریاے جواہر ہمہ تن - ہمراہ - ہریک دلبري مین چالاک ہت جہت بیباک شناہ - انسان تو کیا فرشتہ منہہ کي کھاتا ہے - زلف مسلسل سے دام بردوش ہین الجھا اور پہنس جاتا ہے - گانے والیان شہرۂ آفاق - بجانے کے مشاق - وہ بہي کمسن - آمد شباب کے دن - خوش آواز نغمہ پرداز ہونی ہین - جن و انس کے حوش و حواس کھوتی ہین *

(۳) قباے گل کو پہاڑا جب میرا گل پیرہن نگڑا
بن آئي کچھہ نہ غنچہ سے جو وہ غنچہ دہن نگڑا
کسي چشم سیہ کا جب ہوا ثابت مین دیوانہ
تو مجھہ سے مست ہاتي کیطرح جنگلي ہرن نگڑا
رخ سادہ نہین اس شوخ کا نقش عداوت ہے
نظر آتے ہي آپس مین ہر اہل انجمن بگڑا

کہا بلبل نے جب توڑا گل سوسن کو گلچین نے
الہي خیر کیجو نیل رخسار چمن بگڑا
دنیا ہے وہ صیاد کہ سب دام مین اسکے
آجاتے ہین - لیکن کوئي دانا نہین آتا
ہم رونے پہ آجائین تو دریا ہي بہائین
شبنم کی طرح سے ہمین رونا نہین آتا
مزے یہ دل کیلئی تھے نہ تھے زبان کے لئے
سو ہمنی دلمین مزے سوزش نہان کے لئے
صریح چشم سخنگو تری کہے نہ کہے
جواب صاف ہے پر طاقت وتوان کے لئے
شب کو ہم اسطرح اسکے گرد کا شانہ رہے
جیسی سر گردان سر فانوس پروانہ رہے
ہووے محتاج نمکدان زخم دل بلبل کا کیون
جبکہ شبنم سے بھرا ہر گل کا پیمانہ رہے
مین وہ مجنون ہون کہ صحرا مین زبان خار پر
تا قیامت اس مرے وحشت کا افسانہ رہے
دیکھہ کر خال اسکے رخپر کیونکہ مین حیران نہون
یعنی قائم شعلہ پر کسوجہ پروانہ رہے
ساتھہ لائے ہین ازل سے دید کا آزار ہم
گلشن عالم مین کیا ہین نرگس بیمار ہم
بہگئے ہین واعظا گرداب دور جام مین
زیست بھر ہونگے نہ اس دریاے مے سے پار ہم
گر نظر آتا نہین یک لمحہ وہ نور نگاہ
کرتے ہین تار نظر کو آنسوؤنکا تار ہم
دوڑتے ہین پیچھے قاتل کے گریبان پھاڑ کر
رکھتے ہین کیا اشتیاق زخم دامن دار ہم

FRIDAY, 24TH JANUARY, 10 A.M. TO 1 P.M.

TAMIL TRANSLATION.

Translate into English :—

1. அண்டருலகத் திறைவனவ்வுழியிறுப்ப
மண்டுபுனல்வாளை வளர்பூகமடல்கீறுந்
தண்டலையுடுத்த நிடதந்தனிபுரக்கு
மொண்டிறலுடைக்குரிசில் செய்திறமுரைப்பாம்.

2. உலகனைத்தையுமாக்கிடு மொருவனுமோதிம வடி
வெய்தி, யலகிறந்துள நாளெலாந்தேடியு மறிவதற்
கரிதாகி, யிலகுறுந்திருமுடி யினிலேற்றனன் விற்ற
மும்பினையென்று, னலமுறும்மடியவர்களுக்கெளி
ய வனவிற்றிலேம் முகன்றானே.

3. காலாடுபோழ்திற் கழிகிளைஞர்வானத்து
மேலாடுமீனிற் பலராவ - ரேலா
விடரொருவருற்றக் காலீர்ங்குன்றநாட
தொடர்புடையே மென்பார்சிலர்.

4. எண்பொருளவாகச் செலச்சொல்லித் தான்பி
றர்வாய், நுண்பொருள் காண்பதறிவு.

5. தடுத்திமையாம லிருந்தவர்தாளின்
மடுத்ததுநாணுதி வைத்ததுநோக்கார்
கடுப்பினிலியாரு மறிந்திலர்கையால்
எடுத்ததுகண்டன ரிற்றதுகேட்டார்.

6. ஒன்றினுமாவி யுனக்கிவனொல்கான்
துன்றிடுதோண்மிசை தோமரமேவிக்
கொன்றிடுவாயினி வாயுகுமாரா
வென்றதுவானி னிடத்தசரீரி.

7 அங்கண்மாநிலத் தரியகன்னோசி நாட்டகத்துப்
பொங்குகண்டகியென்பதோர்புண்ணியதீர்த்தம்
அங்கியாம்புகுந்தாடி நின்னருண்முகங்காண
இங்குவந்தன மின்னமுங் கேட்டியென்றிசைப்பார்.

8. தன்கீழ்வாழ்வோர் குற்றஞ்செய்யின் அக்குற்றத்தை நாடி யாவரிடத்தும் கண்ணோட்டம்வையாது நடுவுநிலைமை யைப்பொருந்தி அக்குற்றத்துக்கு விதித்ததண்டத்தை ஆராய்ந்து அவ்வளவினதாகச்செய்வதே அரசனுக்குமுறையாம்.

9. இதுகாறுங் கூறியவாற்றால இரக்கமும நடுவுநிலைமையும் பெரும் புண்ணியமென்பதும் அவையில்லாமை பெரும்பாவமென்பதும், குற்றஞ்செய்தவர்களைத் தண்டித்தல் அக்குற்றம் செய்தார்க்கும் பிறர்க்கும் நன்மைபயத்தலால், அதுவன்கண்மையாகா தென்பதும், அத்தண்டம் செய்யாதொழிதலே வன்கண்மையென்பதும் பெறப்படும்.

10. இருபொருளின் சேர்க்கையால் நூதனப்பொருள்

உண்டாமென்ற இரசாயன உணர்வு பழங்காலமுதல் இந்நா' டாதியாய எந்நாட்டிலுமுண்டாயிருந்தும் நிஷ்காமியமா ய்ச் சாஸ்திரரீதியாய் விசாரணைசெய்யாமல் இரும்புமுத லியவற்றை விலைபெற்ற பொன முதலியவாக மாற்றுவதற் கேற்ற வழிகளை நாடிக் காலம்வாளாகழியும்படி நேர்ந்தது. இழிந்த உலோகங்களை உயர்ந்தனவாகச்செய்ய இச்சிக்கின் ற இரசவாதத்தொழில் அசாத்தியமென்று சாதித்தல் அவசி யம் அன்று. அதுகைகூடி, காண்கின்ற கன்மலைகளைப் பொன்மலைகளாக மாற்றினல், எவ்வளவு நன்மையுண்டா மென்று இரசவாதிகள் எண்ணுகின்றார்களோ, அதனைவிட எவ்வளவோ அதிகமான நன்மை, உண்மையறியவிரும்பிய மதியாளர்கள் தம்கைப்பொருளையும் வாழ்நாளையும் அளித் துப் பயின்றேற்படுத்திய இரசாயனநூலால், பொதுப்பட உலகத்துக்கு இன்றுவரையும் ஜனித்திருக்கின்றதென்று இந் நூலோடோடிய யாவர்க்கும் ஐயமறவிளங்கும்.

11. ஒன்றினும் பற்றற்ற துறவுபொருதிய உள்ளத்தின் கட் சீவ காருண்ணிய நிலைபெற்றிருக்கும். அது நிலைபெற் றிருக்கவே அவ்வுள்ளத்தின்கண் உயிர்களிடத்து வெறுப்பும் பொறாமையும் பொருந்தாமையாற் கொடுஞ்சொற் கூறு மையும் புறங்கூறுமையுமுளவாகும்.

12 விரதங்கள் வரம்பிலவாகலில் அவை தம்முள்ளே பலவற்றையு மகப்படுத்துநிற்குஞ் சிறப்புடையன சிலவற் றை ஈண்டுக்கூறுவான் றொடங்கி, முதற்கண் அருளுடைமை கூறுகின்றார்.

FRIDAY, 24TH JANUARY, 2 TO 5 P.M.

TRANSLATION.

Translate into your vernacular:—

I. Of these more advanced studies, only a small commencement can be made at schools and universities; but even this is of the highest value, by awakening an interest in the subjects, by conquering the first difficulties, and inuring the mind to the kind of exertion which the studies require, by implanting a desire to make further progress, and directing the student to the best tracks and the best helps. So far as these branches of knowledge have been acquired, we have learnt, or been put into the way of learning, our duty, and our work in life. Knowing it, hopever, is but half the work of education; it still remains, that what we know, we shall be willing and determined to put in practice. Nevertheless, to know the truth is already a great way towards disposing us to act upon it. What we see clearly and apprehend keenly, we have a natural desire to act out. "To see the best, and yet the worst pursue," is a possible but not a common state of mind; those who follow the wrong

have generally first taken care to be voluntarily ignorant of the right. They have silenced their conscience, but they are not knowingly disobeying it. If you take an average human mind while still young, before the objects it has chosen in life have given it a turn in any bad direction, you will generally find it desiring what is good, right, and for the benefit of all; and if that season is properly used to implant the knowledge and give the training which shall render rectitude of judgment more habitual than sophistry, a serious barrier will have been erected against the inroads of selfishness and falsehood. Still, it is a very imperfect education which trains the intelligence only, but not the will. No one can dispense with an education directed expressly to the moral as well as the intellectual part of his being. Such education, so far as it is direct, is either moral or religious; and these may either be treated as distinct or as different aspects of the same thing. The subject we are now considering is not education as a whole, but scholastic education, and we must keep in view the inevitable limitations of what schools and universities can do. It is beyond their power to educate morally or religiously. Moral and religious education consist in training the feelings and the daily habits; and these are, in the main, beyond the sphere and inaccessible to the control of public education. It is the home, the family, which gives us the moral or religious education we really receive: and this is completed, and modified, sometimes for the better, often for the worse, by society and the opinions and feelings with which we are there surrounded The moral or religious influence which an university can exercise, consists less in any express teaching, than in the pervading tone of the place. Whatever it teaches, it should teach as penetrated by a sense of duty; it should present all knowledge as chiefly a means to worthiness of life, given for the double purpose of making each of us practically useful to his fellow-creatures, and of elevating the character of the species itself; exalting and dignifying our nature

2. [*Eve to Adam*] "Offspring of Heaven and Earth, and al
Earth's lord,
That such an enemy we have, who seeks
Our ruin, both by thee informed I learn,
And from the parting Angel overheard,
As in a shady nook I stood behind,
Just then returned at shut of evening flowers.
But that thou shouldst my firmness therefore doubt
To God or thee, because we have a foe
May tempt it, I expected not to hear.
His violence thou fear'st not, being such
As we, not capable of death or pain,
Can either not receive, or can repel.
His fraud is, then, thy fear; which plain infers
Thy equal fear that my firm faith and love
Can by his fraud be shaken or seduced:
Thoughts which how found they harbour in my breast,
Adam! misthought of her to thee so dear?"

3. [*Macbeth (aside)*] "Time, thou anticipatest my dread exploits:
The flighty purpose never is o'ertook
Unless the deed go with it: from this moment
The very firstlings of my heart shall be
The firstlings of my hand. And even now,
To crown my thoughts with acts, be it thought and done:
The castle of Macduff I will surprise;
Seize upon Fife; give to the edge o'the sword
His wife, his babes, and all unfortunate souls
That trace him in his line. No boasting like a fool;
This deed I'll do before this purpose cool."

SATURDAY, 25TH JANUARY, 10 A.M. TO 1 P.M.

HISTORY OF ENGLISH LITERATURE.

I. Comment on the importance of the knowledge of the literature of a people as illustrating the history of the people. As an example take the Anglo-Saxons and their literature.

II. Compare, with reference to the effect on the language of the people, the Norman Conquest of England, the Saxon Conquest of England, and the Conquest of Italy by the Goths.

III. What is the period of the Ormulum? What is the subject of the poem? Describe the peculiar spelling adopted by the author.

IV. What English writers were contemporary with Chaucer? Give some account of the writings of each.

V. 1. Compare the drama of the restoration with that of the age of Elizabeth.

2. Name the chief dramatists of the eighteenth century and their principal works.

VI. What foreign literatures influenced English literature in the great impulses it received about the beginning of the 17th, 18th, and 19th centuries respectively? Mention characteristic authors of each period who were clearly thus influenced.

VII. Write a brief biographical sketch and a critical notice of the works of one of the following authors:—Richardson, Fielding, Smollett, Sterne.

VIII. Mention the chief essayists of the reigns of Charles II., Anne, and George III., and compare the styles of any two that differ remarkably.

BRANCH VI. (LATIN.)

MONDAY, 20TH JANUARY, 2 TO 5 P.M.

HISTORY OF THE LATIN LANGUAGE.

I. 1. Give a summary of the principal characteristic distinctions between the languages of the Latin and Umbro-Samnite groups. Illustrate your answer by reference to the following words, assigning

each to its proper dialect and giving the classical Latin equivalents :—Pompeius, Nero, Fasenna, balatro, epona, Rufus, petorritum, popina.

2 In what part of Italy was classical Latin preserved to become the origin of modern Italian, and why?

II. Discuss the peculiarities of the language of Tacitus as illustrative of the Silver Age.

III. 1. Hallam says, "From the difficulty of retaining a right discrimination of tense proceeded the active auxiliary verb. It was possible that this was borrowed from the Teutonic language of the barbarians and accommodated both by them and by the natives to words of Latin origin".

Consider the truth of this statement with reference to one of the Romance languages, illustrating it by examples, and point out the derivation of the ordinary Romance auxiliaries used in place of Latin inflexion, and shew how the Romance languages developed the *articles*.

2. How late can Latin be proved to have been popularly spoken in France?

3. Trace to their Latin origin and write explanatory notes on the changes that have occurred in the following French or Romance words, specially noting any that are developed from the vulgar or non-classical speech :—froid (*cold*), désormais (*henceforth*), ransom, manger (*to eat*), alarm, âge (*age*), cheval (*horse*), alert, même (*same*) feu (*fire*), feu (*late*).

IV. 1. How did Latin depart from the usage of most of the other, Aryan families in the formation of its passive (or middle) inflexion? What theories are formed for the origin of that inflexion?

2. Trace the origin of the suffixes—si,—vi (*perfect*),—bo,—es (*future*).

V. 1. What traces of an old dual and of a present participle middle (or passive) are found in classical Latin? Give all the examples you can.

2. What traces of comparison survive in—iuxta, mox, and primus?

VI. 1. What were the original *ablatival* terminations? Give examples at the various stages of development, and shew that many adverbs are of ablatival origin.

2. What cases are—mihi, domi, amatu? Give reasons for your answer and point out the changes that have occurred.

3. Shew that the present infinitives (active and passive) are really datives, and trace them through their various forms.

VII. What facts in the history of the language do the following suggest?

1. Senatus consultum prior. 2. Sub divo (*in the open air*) 3. Cere comminuit brum. 4. Nemo me dacrumis decoret. 5. Odi profanum Volgus et arceo.

VIII. Give the *history* of the words—mina, collybus, ego, and the English "apricot."

IX. What losses have occurred in—lis, anser, canis, viginti, ubi, lac, vivo, remus, praeda?

X. What *changes* have occurred in the *stems* of the following words:—amnis, Iupiter, nuntius, lupus, arbiter, hostis, tenebrae, templum, feci? Give the full original form of each and the scientific explanation of the alteration.

TUESDAY, 21ST JANUARY, 10 A.M. TO 1 P.M.

TEXT-BOOKS.

(*Vergil Horace. Lucretius*).

I. Translate into English, with short *marginal* notes, where necessary:—

1. Talia saecla, suis dixerunt, currite, fusis
Concordes stabili fatorum numine Parcae.
Adgredere o magnos, aderit iam tempus, honores,
Cara deum suboles, magnum Iovis incrementum.
Aspice convexo nutantem pondere mundum,
Terrasque tractusque maris caelumque profundum,
Aspice, venturo laetantur ut omnia saeclo!
O mihi tam longae maneat pars ultima vitae,
Spiritus et, quantum sat erit tua dicere facta.

(*a*) To whom is the Fourth Eclogue addressed? What is its subject? Give some of the various conjectures as to who the 'Cara deum suboles' was.

2. M. Audieras et fama fuit; sed carmina tantum
Nostra valent, Lycida, tela inter Martia, quantum
Chaonias dicunt aquila veniente columbas.
Quod nisi me quacumque novas incidere lites
Ante sinistra cava monuisset ab ilice cornix,
Nec tuus hic Moeris, nec viveret ipse Menalcas
L. Heu, cadit in quemquam tantum scelus? heu, tua nobis
Paene simul tecum solatia rapta, Menalca?
Quis caneret Nymphas? quis humum florentibus herbis
Spargeret, aut viridi fontis induceret umbra?
M. Immo haec, quae Varo necdum perfecta canebat:
"Vare, tuum nomen, superet modo Mantua nobis,
Mantua, vae, miserae nimium vicina Cremonae,
Cantantes sublime ferent ad sidera cycni."

(*a*) What was the historical occasion of the Ninth Eclogue?

(*b*) Discuss the question how far the Eclogues were original poems.

3. Ausa et iacentem visere regiam
Voltu sereno, fortis et asperas
Tractare serpentes, ut atrum
Corpore combiberet venenum;
Deliberata morte ferocior,
Saevis Liburnis scilicet invidens
Privata deduci superbo
Non humilis mulier triumpho.

4. Quid, quod usque proximos
Revellis agri terminos, et ultra
Limites clientium
Salis avarus ? pellitur paternos
In sinu ferens deos
Et uxor, et vir, sordidosque natos.
Nulla certior tamen
Rapacis Orci fine destinata
Aula divitem manet
Erum. Quid ultra tendis ?

5. Immunis aram si tetigit manus
Non sumptuosa blandior hostia
Mollivit aversos Penates
Farre pio et saliente mica.

6. Vestris amicum fontibus et choris,
Non me Philippis versa acies retro,
Devota non exstinxit arbor,
Nec Sicula Palinurus unda.

7. Quid debeas, o Roma, Neronibus
Testis Metaurum flumen, et Hasdrubal
Devictus et pulcher fugatis
Ille dies Latio tenebris,
Qui primus alma visit adorea,
Dirus per urbes Afer ut Italas,
Ceu flamma per taedas, vel Eurus
Per Siculas equitavit undas

(a) "Horace is the poet of friendship." Verify this statement from the Odes.

8. Nec superare queunt motus itaque exitiales
Perpetuo neque in aeternum sepelire salutem,
Nec porro rerum genitales auctificique
Motus perpetuo possunt servare creata.
Sic aequo geritur certamine principiorum
Ex infinito contractum tempore bellum :
Nunc hic nunc illic superant vitalia rerum
Et superantur item. Miscetur funere vagor
Quem pueri tollunt visentis luminis oras,
Nec nox ulla diem neque noctem aurora secutast
Quae non audierit mixtos vagitibus aegris
Ploratus mortis comites et funeris atri.

9. Nec sic interemit mors res ut materiai
Corpora conficiat, sed coetum dissupat ollis,
Inde aliis aliud coniungit ; et efficit ut omnes
Res ita convertant formas mutentque colores
Et capiant sensus et puncto tempore reddant ;
Ut noscas referre eadem primordia rerum
Cum quibus et quali positura contineantur
Et quos inter se dent motus accipiantque,
Neve putes aeterna penes residere potesse
Corpora prima quod in summis fluitare videmus

Rebus et interdum nasci subitoque perire.

(*a*) Mention some of the chief grammatical peculiarities to be found in Lucretius, limiting your answer to nouns and verbs.

II. 1. Scan the following lines and point out any irregularities to be found in them :—

(*a*) Quid dubitas quin omnis sit haec rationis potestas.
(*b*) Pondera, quantum in se est, cum deorsum cuncta ferantur
(*c*) Quin vacuum per inane deorsum cuncta ferantur.
(*d*) Inter curalium viridis miscere zmaragdos.
(*e*) Ut non omnibus adtribuas sonitus et odores.

2. Mark the quantities of the following words :—(i) lampadas —tempestas—foras—plagas (2)—turicremas. (ii) mele—tute (2) —nempe—inclute.

TUESDAY, 21ST JANUARY, 2—5 P.M.

TEXT-BOOKS.

(*Cicero. Quintilian.*)

I. Translate into English, with short *marginal* notes, where necessary :—

1. Aut de iure dubitari potest eius qui rogat, ut de P. Clodii, qui non rite creatus tribunus arguebatur; aut de ipsius rogationis, quod est varium, sive non trino forte nundino promulgata sive non idoneo die; sive contra intercessionem vel auspicia aliudve quid quod legitimis obstet, dicitur lata esse vel ferri, sive alicui manentium legum repugnare. Sed haec ad illas primas exercitationes non pertinent, nam sunt hae citra complexum personarum, temporum, causarum. Reliqua eadem fere vero fictoque huiusmodi certamine tractantur. Nam vitium aut in verbis aut in rebus est. In verbis quaeritur an satis significent, an sit in iis aliquid ambiguum. In rebus an lex sibi ipsa consentiat, an in praeteritum ferri debeat, an in singulos homines. Maxime vero commune est quaerere an sit honesta an utilis. Nec ignoro plures fieri a plerisque partes; sed nos iustum, pium, religiosum cœteraque his similia honesto complectimur. Iusti tamen species non simpliciter excuti solent. Aut enim de re ipsa quaeritur, ut dignane poena vel praemio sit; aut de modo praemii poenaeque, quia tam maior quam minor culpari potest. Utilitas quoque interim natura discernitur, interim tempore. Quaedam an obtineri possint ambigi solet. Nec me fallit eas quoque leges esse quae non in perpetuum rogentur sed de honoribus aut imperiis, qualis Manilia fuit. Sed de his nihil hoc loco praecipi potest, constant enim propria rerum, de quibus agitur, non communi qualitate.

2. Sed exeamus e theatro: veniamus in forum. Sessum it praetor. Quid? Ut iudicetur qui tabularium incenderit. Quod facinus occultius! At se Q. Sosius, splendidus eques Romanus ex agro Piceno, fecisse confessus est. Qui transscripserit tabulas publicas. Id quoque S. Alenus fecit, quum chirographum Sex—primorum imitatus est. Quid hoc homine sollertius? Cognosce alias quaestiones, auri Tolasani, coniurationis Iugurthinæ. Repete

superiora: Tubuli de pecunia capta ob rem iudicandam: posteriora de incestu, rogatione Peducaea: tum haec quotidiana, sicae, veneni, peculatus, testamentorum etiam lege nova quaestiones. Inde alia actio, OPE CONSILIOQUE TUO FURTUM AIO FACTUM ESSE; inde tot iudicia de fide mala, tutelæ, mandati, pro socio, fiduciæ; reliqua, quae ex empto aut vendito aut conducto aut locato contra fidem fiunt; inde iudicium publicum rei privatae lege Plaetoria; inde everriculum malitiarum omnium, iudicium de dolo malo: quod C. Aquillius, familiaris noster, protulit, quem dolum idem Aquillius tum teneri putat quum aliud sit simulatum, aliud factum.

3. Equidem efferor studio patres vestros quos colui et dilexi videndi: neque vero eos solum convenire aveo quos ipse cognovi, sed illos etiam de quibus audivi et legi et ipse conscripsi. Quo quidem me proficiscentem haud sane quis facile retraxerit, neque tamquam Peliam recoxerit. Quod si quis deus mihi largiatur ut ex hac aetate repuerascam et in cunis vagiam, valde recusem. Nec vero velim, quasi decurso spatio, ad carceres e calce revocari. Quid enim habet vita commodi? Quid non potius laboris? Sed habeat sane; habet certe tamen aut satietatem aut modum. Non lubet enim mihi deplorare vitam, quod multi et ii docti saepe fecerunt; nec me vixisse pœnitet; quoniam ita vixi ut non frustra me natum existimem: et ex vita ita discedo tamquam ex hospitio, non tamquam ex domo Commorandi enim natura deversorium nobis, non habitandi [locum] dedit.

4. Alius igitur finis veræ amicitiæ constituendus est, si prius quid maxime reprehendere Scipio solitus est edixero. Negabat ullam vocem inimiciorem amicitiæ potuisse reperiri quam eius qui dixisset ita amare oportere ut si aliquando esset osurus: nec vero se adduci posse ut hoc quemadmodum putaretur a Biante esse dictum crederet, qui sapiens habitus esset unus e septem; [sed] impuri cuiusdam aut ambitiosi aut omnia ad suam potentiam revocantis esse sententiam. Quonam enim modo quisquam amicus esse poterit, cui se putabit inimicum esse posse? Quin etiam necesse erit cupere et optare, ut quam sæpissime peccet amicus quo plures det sibi tamquam ansas ad reprehendendum: rursum autem recte factis commodisque amicorum necesse erit angi, dolere, invidere.

II. 1. 'Sensum ipsum qui communis dicitur.' In what way was 'communis sensus' used by Quintilian and other Latin authors, and how does it differ from the modern idea of 'common sense'?

2. Distinguish and classify *barbarismi* and *solœcismi*. Are *centum milia nummum* and *fidem Deum* solecisms? Give reasons for your answer.

3. What absurd etymologies does Quintilian or Cicero give for—capsis, Lupercalia, Saturnius, Neptunus, Ceres, Janus, Sol, Luna, Diana? Point out the error of each and give the correct etymology.

4. How does Quintilian define '*ars*'? Give its classification. State and refute the objections to Rhetoric being regarded as an *ars* What is the *materia* of Rhetoric (*a*) as an *ars* (*b*) as a *virtus?*

5. Quote in the original the definitions of—*prolepsis, natura,*

amicitia, and "instinct." How is *versutus* distinguished from *callidus?*

6. "Democritus . . . . . cuius fontibus Epicurus hortulos suos irrigavit." Consider how far this is true. State Democritus' atomic theory, and shew how Epicurus improved upon it. Name the other atomist philosophers.

7. Explain the *allusions* in the following:—

(*a*) Qua de re Catulli nobile epigramma est.

(*b*) Alius percontanti, Theodoreus an Apollodoreus esset? Ego, inquit, parmularius sum.

(*c*) Agamus igitur pingui Minerva, ut aiunt.

(*d*) Praeposteris enim utimur consiliis et acta agimus, quod vetamur vetere proverbio.

(*e*) Cooptatio enim collegiorum ad populi beneficium transferebatur.

(*f*) M. vero Cethegum, quem recte *suadae medullam* dixit Ennius.

WEDNESDAY, 22ND JANUARY, 10 A.M. TO 1 P.M.

LATIN ESSAY.

Write an essay in Latin on *one* only of the following subjects:—

1. Exemplo quodcunque malo committitur ipsi
   Displiget auctori; prima est hæc ultio quod se
   Iudice nemo nocens absolvitur. *Juvenal*
2. Tu regere imperio populos, Romane, memento. *Vergil*
3. The early life and education of a Roman youth.

THURSDAY, 23RD JANUARY, 10 A.M. TO 1 P.M.

TEXT-BOOKS.

(*Plautus. Terentius. Persius.*)

I. Translate into English:—

1. Hercle ego huic die, si liceat, oculos ecfodiam lubens:
   Ita malignitate oneravit omnis mortalis mihi.
   Neque ieiuniosiorem nec magis ecfertum fame
   Vidi nec quoi minus procedat quidquid facere occeperit:
   Ita venter gutturque resident esurialis ferias.
   Licet parasiticae arti maxumam in malam crucem
   Ita iuventus iam ridiculos inopes ab se segregat.
   Nil morantur iam Lacones imi subselli viros,
   Plagipatidas, quibus sunt verba sine penu et pecunia.
   Eos requirunt, qui, lubenter quom ederint, reddant domi
   Ipsi obsonant, quae parasitorum ante erat provincia.
   Ipsi de foro tam aperto capite ad lenones eunt,
   Quam in tribu sontis aperto capite condemnant reos,
   Neque ridiculos iam terunci faciunt.

2 ER. Tum piscatores qui praebibent populo piscis fœtidos,
   Qui advehuntur quadrupedanti crucianti cantherio,

Quorum odos subbasilicanos omnis abigit in forum :
Eis ego ora verberabo surpicalis piscariis,
Ut sciant alieno naso quam exhibeant molestiam.
Tum lanii autem, qui concinnant liberis orbas oves,
Qui locant caedundos agnos et dupla agninam danunt,
Qui petroni nomen indunt verveci sectario :
Eum ego si in via petronem publica conspexero,
Et petronem et dominum reddam mortalis miserrumos.
HE. Euge : edictiones aedilicias [pol] habet hic quidem :
Mirumque adeost ni hunc Ætoli sibi fecere agoranomum.
3. GE. Sed mihi opus erat, ut aperte tibi nunc fabuler,
Aliquantulum quae afferret qui dissolverem
Quae debeo ; et etiam nunc si vult Demipho
Dare quantum ab hac accipio quae sponsa est mihi,
Nullam mihi mallem quam istanc uxorem dari.
DE. Quid si animam debet ? GE Ager oppositus est pignori,
Ob decem minas, inquit. DE Age, Age ; iam ducat ; dabo.
GE. Ædiculae item sunt ob decem alias. DE. Oi ! hui !
Nimium est. CH. Ne clama : petito hasce a me decem.
GE. Uxori emenda ancillula est : tum pluscula
Supellectile opus est ; opus est sumptu ad nuptias :
His rebus sane pone, inquit, decem minas.
DE. Sexcentas proinde scribito iam mihi dicas :
Nihil do : impuratus me ille ut etiam irrideat ?
CH Quaero, ego dabo, quiesce : tu modo filius
Fac ut illam ducat nos quam volumus.
CH. Meacausa eiicitur : me hoc est aequom amittere.
GE. Quantum potest me certiorem, inquit, face,
Si illam dant, hanc ut mittam ; ne incertus siem ;
Nam illi mihi dotem iam constituerunt dare.
CH. Iam accipiat ; illis repudium renuntiet ;
Hanc ducat. DE. Quae quidem illi res vortat male.
4. 'An tali studeam calamo ?' Cui verba ? quid istas
Succinis ambages ? tibi luditur, effluis amens,
Contemnere : sonat vitium percussa, maligne
Respondet viridi non cocta fidelia limo.
Udum et molle lutum es. Nunc nunc properandus et acri
Fingendus sine fine rota. Sed rure paterno
Est tibi far modicum, purum et sine labe salinum—
Quid metuas ?—cultrixque foci secura patella.
Hoc satis ? An deceat pulmonem rumpere ventis ?
Stemmate quod Tusco ramum millesime ducis,
Censoremve tuum vel quod trabeate salutas ?
Ad populum phaleras. Ego te intus et in cute novi.
Non pudet ad unorem discincti vivere Nattae ?
Sed stupet hic vitio et fibris increvit opimum
Pingue, caret culpa, nescit quid perdit, et alto
Demersus summa rursus non bullit in unda.
5. Tu mare transilias ? tibi torta cannabe fulto
Cena sit in transtro, Veientanumque rubellum

Exalet vapida laesum pice sessilis obba ?
Quid petis ? ut nummos quos hic quincunce modesto
Nutrieras pergant avidos sudare deunces ?
Indulge genio, carpamus dulcia ! Nostrum est
Quod vivis ; cinis et manes et fabula fies.
Vive memor leti. Fugit hora—hoc quod loquor inde est.
En quid agis ? duplici in diversum scinderis hamo.
Huncine an hunc sequeris ? subeas alternus oportet
Ancipiti obsequio dominos, alternus oberres.

II. Translate and explain by short notes :—

1. Vos qui potestis ope vestra censerier,
Accipite relicuom : alieno uti nil moror.
2. Hei metuo lenonem ne quid suo suat capiti
3. Ita fugias ne praeter casam, quod aiunt.
4. Si puteal multa cautus vibice flagellas.
5. Cor iubet hoc Enni, postquam destertuit esse
Maeonides Quintus pavone ex Pythagoreo.

III. Write short explanatory notes on the following :—

Ubi res prolatae sint—barbarica lege—qui sputatur morbus—sine sacris hereditatem—laterem lavem—succenturiatus—versura solves—nigrum theta—iugum pertusa ad compita figit—una Quiritem vertigo facit—in decursu lampada poscis—Chrysippe tui finitor acervi.

IV. Write notes on anything irregular in the *syntax* of the following :—

1. Quicumque adflate Cratino
Iratum Eupolidem praegrandi cum sene palles.
2. Virtutem videant intabescantque relicta.
3. Non equidem hoc dubites.
4. Excepto si quid Masuri rubrica vetavit.

V. Give the etymology of—perperam, cliens, sontis, arbites, protelet, eccere.

THURSDAY, 23RD JANUARY, 2—5 P.M.

TEXT-BOOKS.

Livy. Tacitus.

I. Translate into English :—

1. Nova etiam haud magni operis adversus eos qui in cuniculo erant, excogitata res est. Dolium a fundo pertusum, qua fistula modica inseri posset, et fistulam ferream, operculumque dolii ferreum et ipsum, pluribus locis perforatum, fecerunt; hoc tenui pluma completum dolium, ore in cuniculum verso, posuerunt. Per operculi foramina prælongæ hastæ, quas sarissas vocant, ad summovendos hostes eminebant: scintillam levem ignis inditam plumae, folle fabrili ad caput fistulæ imposito, flando accenderunt: inde non solum magna vis fumi, sed acrior etiam fœdo quodam nidore ex adusta pluma cum totum cuniculum complesset, vix durare quisquam intus poterat.

(*a*) Who were the parties engaged in, and where was the scene of, the conflict described in this passage?

(*b*) Give and connect the different meanings of *cuniculus*, and of *fundus*.

(*c*) Compare *tenuis*. How is the word spelt by poets?

2. Horum aedilium Ludos Romanos primum senatus a populo Romano secretus spectavit, præbuitque sermones (sicut omnis novitas solet), aliis tandem quod multo ante debuerit tributum consentibus amplissimo ordini; aliis demptum ex dignitate populi quidquid maiestati patrum adiectum esset interpretantibus, et omnia discrimina talia quibus ordines discernerentur, et concordiæ et libertatis æque minuendæ esse. Ad quingentesimum quinquagesimum octavum annum in promiscuo spectatum esse. Quid repente factum cur immisceri sibi in cavea patres plebem nollent? Cur dives pauperem consessorem fastidiret? Novam et superbam libidinem ab nullius ante gentis senatu neque desideratam neque institutam.

(*a*) When were the Ædiles established? What other institution was coeval with theirs?

(*b*) Give an account of the Ludi Romani, and draw the ground plan of the place where they were celebrated, marking in it the *cavea* and other noteworthy parts.

(*c*) Supply the word understood after *debuerit*, and derive *debuerit*.

(*d*) What year B.C. is referred to in the above extract?

3. Thaumaci a Pylis sinuque Maliaco per Lamiam eunti loco alto siti sunt, ipsis faucibus imminentes *quae* Coela vocant: Thessaliaeque *transeunti* confragosa loca, implicatasque flexibus vallium vias, ubi ventum ad hanc urbem est, repente velut *maris vasti*, sic immensa panditur planities, ut subiectos campos terminare oculis haud facile queas. Ab eo miraculo Thaumaci appellati.

(*a*) Draw an outline of the *Sinus Maliacus* and of the adjacent coast; show the position of *Pylae*; and give, with dates, the events connected with this place.

(*b*) Write notes on the grammatical construction of the italicized words.

(*c*) Explain the last sentence.

4. Nihil eorum Vitellianos fallebat, crebris, ut in civili bello transfugiis; et exploratores, cura diversa sciscitandi, sua non occultabant. Quieti intentique Caecina et Valens, quando hostis imprudentia rueret, quod loco sapientiae est, alienam stultitiam opperiebantur, inchoato ponte transitum Padi simulantes, adversus oppositam gladiatorum manum, ac ne ipsorum miles segne otium tereret.

(*a*) Point out one striking instance of Tacitus' partiality for abstract, instead of concrete, nouns.

5. Nihil aeque fatigabat quam pecuniarum conquisitio: eos esse belli civilis nervos dictitans Mucianus, non ius, aut verum in cognitionibus, sed solam magnitudinem opum spectabat. Passim delationes, et locupletissimus quisque in praedam correpti: quae gravia et intoleranda, sed necessitate armorum excusata, etiam in pace mansere.

(*a*) What other words, besides *quam*, are used in connection with *aeque?*

(*b*) What does *correpti* refer to?

(*c*) Contrast the character of Mucianus with that of Vespasianus, as delineated by Tacitus.

II. Without translating, re-write the following, changing the direct speech into indirect and *vice versâ*:—

Quam trepidationem ubi Flaccus conspexit, equo advehitur ad legionarios equites, et "Ecquid auxilii in vobis est? Actum iam de hoc exercitu erit." Cum undique acclamassent: "Quin ederet quid fieri velit? Non segniter imperium exsecuturos": "duplicate turmas, inquit, duarum legionum equites, et permittite equos in cuneum hostium, quo nostros urgent: id cum maiore vi equorum facietis, si effrenatos in eos equos immittitis."

III. What is the meaning which the following phrases have in your Texts? Add a brief explanation only when it is needed for the full understanding of the meaning:—

(1) Tumultuarius exercitus. (2) Argentum bigatum, infectum, mulctatitium. (3) In medium consultare. (4) Calumniam in aliquem iurare. (5) Diplomata Othonis. (6) Sestertium quater et vicies. (7) Quiritatio.—Remark on the debated origin of this word.

IV. Explain the syntax of the italicized words:

1. Nos *aequi bonique* facimus.

2. *Translatum* argenti *pondo* novem millia trecenta viginti.

3. In bona deinde L. Scipionis *possessum* publice quaestores praetor misit .... sed nequaquam *tantum* redactum est *quantae summae* damnatus fuerat.

4. Titus, spectata opulentia donisque regum, *quaeque alia laetum antiquitatibus Graecorum genus incertae vetustati adfingit*, de navigatione primum consuluit.

[Consider the syntax of the whole clause in this last sentence.]

V. 1. Give (*a*) the principal parts of the verbs to which the following forms belong:—deusserat, desilire, pertusum, pensi.

(*b*) The meaning of inaedificatus, adustus, immolitus, with special reference to the prefixes.

(*c*) The roots of ancora, discrimen, sermo, fundus, fundo (is), tenuis, difficultas, and the meaning of each root.

(*d*) The diminutives of plus, longius, domus, aedes, ignis, munus, os.

(*e*) The figurative meaning of stipes, mentiri, viscera, inustus

VI. 1. Mark the different meanings, and the different quantity which the following words take according to their different meanings: occidit, populus, liber, malus, latus, labor.

2. Give the modern names of the following places:—Arar, Colonia Forciuliensis, Felsina, Panormus; the derivation of—Cynocephalæ, Hemerodromos, argyraspides, etesiae

VII. 1. What was the object of the Lex Oppia? What was its fate?

2. Livy is not always consistent with himself in his narrative. Can you adduce any instance in proof of this?

FRIDAY, 24TH JANUARY, 10 A.M. TO 1 P.M.

TRANSLATION.

Translate into English :—

1. Egnatius, quod candidos habet dentes,
Renidet usquequaque. Seu ad rei ventum est
Subsellium, cum orator excitat fletum,
Renidet ille : quidquid est, ubicumque est,
Quodcumque agit, renidet. Hunc habet morbum,
Neque elegantem, ut arbitror, neque urbanum.
Quare monendus es mihi, bone Egnati :
Si urbanus esses, aut Sabinus, aut Tiburs,
Aut pastus Umber, aut obesus Etruscus,
Aut Lanuvinus ater atque dentatus,
Aut Transpadanus, (ut meos quoque attingam)
Aut quilibet, qui puriter lavit dentes ;
Tamen renidere usquequaque te nollem :
Nam risu inepto res ineptior nulla est.
Nunc Celtiber es.

2. Mutua viginti sestertia forte rogabam,
Quae vel donanti non grave munus erat :
Quippe rogabatur felixque vetusque sodalis,
Et cuius laxas arca flagellat opes.
Is mihi, Dives eris si causas egeris, inquit.
Quod peto da, Cai, non peto consilium.

3. Librum, quo nuper optimo principi consul gratias egi, misi exigenti tibi, missurus etsi non exegisses. In hoc consideres velim, ut pulchritudinem materiae, ita difficultatem. In caeteris enim lectorem novitas ipsa intentum habet ; in hac, nota, vulgata, dicta sunt omnia : quo fit, ut quasi otiosus securusque lector tantum elocutioni vacet, in qua satisfacere difficilius est, quum sola aestimatur. Atque utinam ordo saltem, et transitus, et figurae simul spectarentur ! Nam invenire praeclare, enuntiare magnifice, interdum etiam barbari solent ; disponere apte, figurare varie, nisi eruditis, negatum est. Nec vero affectanda sunt semper elata et excelsa. Nam, ut in pictura lumen non alia res magis quam umbra commendat, ita orationem tam submittere, quam attollere decet. Sed quid ego haec doctissimo viro ? Quin potius illud : "Annota quae putaveris corrigenda." Ita enim magis credam caetera tibi placere, si quaedam displicuisse cognovero.

4. Nunquam ante Macedonia, vel ulla gens, tam clarorum virorum proventu floruit ; quos primo Philippus, mox Alexander tanta cura legerat, ut non tam ad societatem belli, quam in successionem regni, electi viderentur. Quis igitur miretur, talibus ministris, orbem terrarum victum, cum exercitus Macedonum tot, non ducibus, sed regibus regeretur ? qui nunquam sibi reperissent pares, si non inter se concurrissent ; multosque Macedonia pro uno Alexandros habuisset, nisi fortuna eos aemulatione virtutis in perniciem mutuam armasset.

5. Quod si viri sapientissimi, et in re militari et in aliis rebus multa contra veterem consuetudinem cum essent usi, laudati: despiciendi sunt qui potiorem dicunt oportere esse consuetudinem ratione An quom quis perperam consuerit quid facere in civitate, non modo patiemur, sed etiam poena afficiemus: idem, si quis perperam consuerit dicere verbum, non corrigemus, cum id fiat sine poena? Et hi, qui pueros in ludum mittunt, ut discant quae nesciunt verba, quemadmodum scribant, idem barbatos, qui ignorabunt verba, quemadmodum oporteat dici, non docebimus, ut sciant qua ratione conveniat dici?

FRIDAY, 24TH JANUARY, 2—5 P.M.

TRANSLATION.

I. Translate into Latin:—

1. Solmes, though he was said by those who knew him well to have valuable qualities, was not a man likely to conciliate soldiers who were prejudiced against him as a foreigner. His demeanour was arrogant, his temper ungovernable. Even before the unfortunate day of Steinkirk the English officers did not willingly communicate with him and the private men murmured at his harshness. But after the battle the outcry against him became general. He was accused, perhaps unjustly, of having said with unfeeling levity while the English regiments were contending desperately against great odds, that he was curious to see how the bulldogs would come off. Would anybody, it was asked, now pretend that it was on account of his superior skill and experience that he had been put over the heads of so many English officers? It was the fashion of the day to say that those officers had never seen war on a large scale: but surely the merest novice was competent to do all that Solmes had done, to misunderstand orders, to send cavalry on duty which none but infantry could perform, and to look on at a safe distance while brave men were cut to pieces. It was too much to be at once insulted and sacrificed, excluded from the honours of war, yet pushed to its extreme dangers, sneered at as raw recruits and then left to cope unsupported with the finest body of veterans in the world.

2. My dear John.

Your two letters were very agreeable, and it gives me great pleasure to find your situation so pleasant to you, with a prospect of its being so advantageous with respect to your improvement. I miss you exceedingly; but the reflection and the hope that you will profit by it reconcile me to the separation; and, you may be assured, I am much more happy with such prospects in view than if you were with me, and without them. But mental advantages are not all that have to be considered. You should also have regard to your health, for without health there can be no enjoyment Do not neglect to pay proper attention to that, and spare nothing that will contribute to preserve it; and if anything should at any time

ail you, do not neglect to attend to it in time.

Your affectionate father,

LONDON, *April 12th*, 1711.

3. A furious party-spirit when it rages in its full violence exerts itself in civil war and bloodshed, and when it is under its greatest restraints naturally breaks out in falsehood, detraction, calumny, and a partial administration of justice. In a word it fills a nation with spleen and rancour, and extinguishes all the seeds of good nature, compassion, and humanity. Plutarch very finely observes that a man should not allow himself to hate even his enemies, because, says he, if you indulge this passion on some occasions, it will rise of itself in others; if you hate your enemies you will contract such a vicious habit of mind as by degrees will break out upon those who are your friends or those who are indifferent to you. I might here observe how admirably this precept of morality, which derives the malignity of hatred from the passion itself and not from its object, answers to that great rule which was dictated to the world about a hundred years before this philosopher wrote, but instead of that I shall only notice with real grief of heart that the minds of many good men among us appear soured with party-principles and alienated from each other in such a manner as seems to me altogether inconsistent with the dictates of reason or religion.

SATURDAY, 25TH JANUARY, 10 A.M. TO 1 P.M.

HISTORY OF LATIN LITERATURE.

I. Mention, with approximate dates, three of the earliest specimens of Latin Literature; cite any fragments you may remember from *one* of them, and add critical notes.

II Give the dates of the birth and death of Cato Major and Ennius. What works did they write? Give the substance of any two (one from each) notable fragments of their works that have come down to us. Contrast the respective influence of Cato and Ennius on the literature of Rome.

III. Quintilian says: "In comoedia maxime claudicamus." Horace: "Habet comoedia tanto plus oneris quanto veniae minus." How does Quintilian account for his own statement? What is Horace's precise meaning? What does he complain of as being a discouragement to comic writers?

IV. Mention, in chronological order, the philosophical works of Cicero. How would you classify them? Give a summary of his "De Officiis."

V. "Dicar . . . princeps Aeolium carmen ad Italos deduxisse modos". (Hor.) To what Greek poets and to what metres is particular reference made in these words? Quote instances of the metres alluded to, and give a full description of their metrical structure. Does either of the above Horatian metres differ in anything from its model?

VI. Name the poems from which the two following extracts are

taken; compare the one with the other with a view to show their respective merits or defects:—

1. Ergo inter sese paribus concurrere telis
Romanas acies iterum videre Philippi;
Nec fuit indignum superis bis sanguine nostro
Emathiam et latos Haemi pinguescere campos.
Scilicet et tempus veniet quum finibus illis
Agricola, incurvo terram molitus aratro,
Exesa inveniet scabra robigine pila,
Aut gravibus rastris galeas pulsabit inanes,
Grandiaque effossis mirabitur ossa sepulcris.

2. Thessalica infelix, quo tanto crimine, tellus,
Laesisti superos, ut te tot mortibus unam,
Tot scelerum fatis premerent? Quod sufficit aevum
Immemor ut donet belli tibi damna vetustas?
Quae seges infecta surget non decolor herba?
Quo non Romanos violabis vomere manes?
Ante novae venient acies, scelerique secundo
Praestabis nondum siccos hoc sanguine campos.

VII. How far was Livy qualified for writing the history of Rome? From what sources did he draw his materials, and how does he make use of them? What other sources did he neglect entirely? Compare his "animus," or the spirit under the influence of which he wrote, with that of Tacitus.

VIII. Is a tyrannical or despotic Government favorable to the growth of literature, or the reverse? How dow you explain the fact of Roman literature flourishing under Augustus, being at a very low ebb under Tiberius, and rising again under Nero?

IX. Characterize in three or four lines (not more), after Quintilian's manner, the style of Cicero in his letters; of Sallust; of Pliny the younger; of Tacitus (1) in his Dialogue *De Oratoribus*, (2) in his Annals; of Aulus Gellius.

X. Give, in a tabular form, the names of the Post-Augustan epicists, the place and the date of their birth, the title and the subject of their epic poem, their principal merit and defect.

B.L. DEGREE EXAMINATION, 1890.

MONDAY, 3RD FEBRUARY, 10 A.M. TO 1 P.M.

THE LAW OF EVIDENCE.

I. 1. Define (*a*) Admission. (*b*) Public documents. (*c*) Secondary evidence.

2. Explain what is meant by a patent and a latent ambiguity, and state what is their effect.

3. Explain what is meant by immediate real evidence, and state from what this class of evidence is contradistinguished.

II. In a trial by jury, define the functions of the judge and the jury.

III. What is the effect of an alteration in a document as against the party that produces it? Notice the leading cases on this subject.

IV. State the point or points decided in the following cases, noticing whether any and what departure has been made by the Indian Law with respect to all or any of them :—

1. Slatterie *v.* Pooley. 2. Higham *v.* Ridgway. 3. The Sussex Peerage case.

V. When will statements of deceased persons become relevant facts.

VI. State the rules that regulate the admissibility of evidence of the character of a party to a judicial proceeding.

VII. When will a party be entitle to give secondary evidence of the contents of a document in the possession of his adversary and for the production of which no notice was given?

VIII. Compare the English and the Indian Law in the treatment of the subject of estoppel, and show how they differ.

IX. What communications are privileged?

X. State the difference if any between the English and the Indian law on the following subjects :—

1. Admissibility of evidence of husband or wife for or against each other. 2. Admissibility of dying declarations. 3. Admissibility of evidence of previous conviction. 4. Obligation to answer a criminating question. 5. The evidence of an accomplice

XI. Decide upon the question of the admissibility or otherwise of the following evidence, stating your reasons fully :—

1. A, by will, bequeathed a legacy in terms "to my brother B's son C." C claims the legacy. The executors oppose the claim, and propose to prove that C was the illegitimate son of B, and as such was not within the intent of A, but that A intended the legacy to the legitimate son of B, who was also named C, but who had predeceased A, a fact not known to A.

2. A bequeaths a legacy in terms "to my brother B's relation." C claims the legacy. The executors oppose the claim contending that C was not within the intent of A. C proposes to prove that A was in the habit of using the expression "B's relation" only with reference to himself (C) and none other

3. A, by will, bequeathed a legacy of 1,000 Rs to his brother C, among several bequests to several persons A by a subsequent codicil makes some alterations in respect of some of the bequests, and provides in terms "I bequeath to my brother C a sum of Rs. 1,000" C claims both the legacy under the will and that in the codicil as separate bequests, and proposes to prove that two separate gifts were intended, while the executors that oppose the claim contend and propose to prove that the gift under the codicil was only a reaffirmance of the gift under the will.

MONDAY, 3RD FEBRUARY, 2 TO 5 P.M.

CONTRACTS.

I. "Every agreement, of which the object or consideration is unlawful, is void."

Discuss, with reference to this proposition, the cases of (1) an agreement to do certain things of which some only are unlawful; (2) an agreement entered into for a consideration of which part only is unlawful; (3) an agreement the immediate object of which is not unlawful, but which is entered into by one of the parties with an unlawful intention.

II. "Every agreement by which any party thereto is restricted absolutely from enforcing his rights under or in respect of any contract by the usual legal proceedings in the ordinary tribunals ....is void to that extent."

How far does the law recognize and enforce contracts to refer to arbitration?

A agreed to employ B in his factory at a certain rate of wages, B depositing a sum of money by way of security for the due performance of his duties; it was also agreed that A's manager should be the sole judge of A's right to retain B's deposit and wages in whole or in part. In a suit by B against A (who had dismissed him) to recover his deposit and wages, A pleads a decision of his manager justifying him in retaining them. Is this a good defence or not, and why?

III. Discuss the following proposition:—

"When loss or injury is caused to third persons by the wrongful act or omission of any partner, the firm is liable therefor to the same extent as the partner so acting or omitting to act."

Is the firm liable to B under the following circumstances to any, and if so, to what extent, and why?

1. A member of a firm of traders is appointed under A's will trustee of certain moneys for A's son, B. The trustee employs the trust money in the business of the firm.

2. B, a customer of a firm, deposits with it for safe custody a box containing securities. He afterwards authorizes C, one of the members of the firm, to take out some of them and replace them by certain others. C does so; but he also makes certain other changes and converts some of the securities to his own use.

IV. A and B, carrying on business as merchants at Madras, purchased two cases of goods from C, a merchant at Hull, to be paid for at a certain credit. The goods were shipped deliverable to A and B, and a bill of lading for each case was signed. A and B afterwards became insolvent, and C desires to stop the goods in transit. It appears that A and B had endorsed one of the bills of lading to a bank as security for a loan, and afterwards, on finding the state of their affairs to be hopeless, had agreed to assign all their estate to D, one of their creditors, to whom accordingly they endorsed the other bill of lading. Advise C.

V. In 1888 A drew bills of exchange on B, which were accepted by B for the accommodation of A and endorsed by A to the Incorporated Bank In 1889 A gave B a lien on certain property to secure the payment of the bills. A shortly afterwards being insolvent, executed a conveyance of all his property to a trustee on trust for his creditors. The Incorporated Bank having assented to and executed

this deed now sues B as acceptor of the bills. Discuss this case with reference to the question whether B is estopped from pleading that he was an accommodation acceptor only, and generally with reference to the rights of the parties.

VI. 1. A, an undergraduate under age, buys a diamond ring of great value, and also a lot of articles of clothing which are suitable to his condition of life, but of a kind of which, unknown to the clothier who sold them to him, he has already a sufficient supply. He hires a horse for a ride along the beach, but rides across paddy fields instead, and breaks the horse's knees in trying to jump a bund. How far has A a legal defence to any suits that may be brought against him ?

2. An English woman, married in India and having property settled upon her for her separate use without power of anticipation bought goods from a Madras tradesman who now sues her for the price. Discuss his rights as against her property.

VII. What is meant by (1) surrender and (2) forfeiture of a lease ? What effect have the surrender and forfeiture of a lease respectively upon the rights and liabilities of a sub-lessee ?

Under what circumstances does the receipt of rent amount to waiver of a forfeiture ?

VIII. State and discuss shortly the various ways in which a party to a contract may be discharged from his liability under the contract. Is there any difference between the law in England and in India as to this ?

IX. When can a plaintiff, who has not performed his part of a contract entered into by him with the defendant, recover in respect of what he has done under it ?

TUESDAY, 4TH FEBRUARY, 10 A.M. TO 1 P.M.

THE LAW OF TORTS.

I. How far is a man liable to another for harm done by him to the latter through accident ?

II. In what cases is a mere menace actionable ?

III. In what cases can a plaintiff, who merely proves that he was in possession of the property sued for before the defendant, succeed in recovering possession of it from him ?

IV. In what cases is an innocent purchaser of goods held liable for conversion ?

V. Can there be trespass committed by one tenant in common against another, and if so, in what cases ?

VI. What is the distinction between trespass and nuisance ? Can the same act amount to both, and if so, give instances.

VII. Can a wrong-doer sue for wrong done to himself, and if so, in what cases ?

VIII. In what cases is a man liable for reckless assertions made by him ?

IX In what cases is a license irrevocable ?

TUESDAY, 4TH FEBRUARY, 2 TO 5 P.M.

CRIMINAL LAW.

I. A is prosecuted for publishing an obscene book, and pleads that his object was to promote morality. Discuss the validity of this defence. A report of the proceedings of A's trial was published by B in a newspaper setting out the obscene passages in the book. Is B liable to punishment? Give reasons for your answers, and state shortly the English law on the questions raised. How would you define 'obscene' with reference to this matter?

II. 1. A (an Englishman), believing on reasonable grounds that his wife was dead, within two years of the date of her supposed death married again. Has A committed an offence? Compare the English law on the subject.

2. If Z being informed by X that she was above 16 years of age, and *bonâ fide* believing the statement to be true, (*a*) induces X to leave her parents' custody and live with him as a concubine, or, (*b*) induces the parents of X to consent to X living with him as a concubine in consideration of money paid to the parents, can Z be punished under the Penal Code? Give reasons for your answers, and compare the English law on the subject.

III. Define cheating, describe its aggravated forms, and compare the English law on the subject.

IV. Criticise the definition of Criminal Trespass in the Penal Code.

A, against the express orders of B, enters B's forest to shoot. Having shot an elephant, a tiger, and a snipe, A carried away from the said forest the tusks of the elephant, the skin of the tiger, and the snipe. Advise B whether, and for what, A can be prosecuted, and cite any cases you may know relevant to this matter.

V. A found B catching hares on C's land with nets. A seized B's nets and refused to give them up without C's orders. Has A committed an offence?

How far, if at all, does theft differ from larceny?

VI. The public prosecutor of a Sessions Court, having obtained a conviction in a murder case, was offered and accepted a present of Rs. 100 from the relatives of the murdered person. Is this act penal? Give reasons for your answer.

VII. What is meant by exciting disaffection to the Government, punishable under the Penal Code?

VIII. A is found with a forged bond in his possession, and is proved to have known it was forged.

A, intending to poison B, puts salt by mistake for arsenic into B's rice.

A, intending to shoot B, fires at a gate post.

A, intending to murder his guest B, and believing, B, who was absent, to be asleep in his bed, sets fire to his own house.

Discuss the question of A's liability to punishment in these cases.

WEDNESDAY, 5TH FEBRUARY, 10 A.M. TO 1 P.M.

PROCEDURE.

I. A obtained a decree for money against B and applied for execution against B's property at once. B desires to take Counsel's opinion before filing an appeal, and applies to the Court to stay execution in the mean time. Can the Court grant this request on any, and if any, on what terms? If the Court refuses to stay execution, has B a right of appeal?

II A claimed certain property from Z, (1) as the adopted son of B, the last owner, and (2) under the will of B, and obtained a decree on the second ground only, the court holding that the adoption was not proved Z appealod A wishes to have the Court's judgment reversed on the question of adoption. State what course he should adopt.

III A sued B to recover the price of a horse sold to C, the agent of B. B pleaded that C was not his agent. A applied to have C made a defendant, and to amend the plaint so as to claim relief against C, in case he failed to prove agency. C objected. Decide the question and give your reasons, and state whether an appeal would lie.

IV. A sued B for Rs. 1,000 in Chingleput, and obtained a decree. B was absent, and his pleader, without reasonable excuse, failed to appear. The claim was clearly barred by limitation. Advise B as to his cheapest and best remedy.

V. A obtained a decree against B, a European possessing moveable property at Nellore, and attached B's property? Before sale B died, leaving no representative in India. Advise A what steps to take to realise his decree.

VI. A had a shop in Mysore and a shop in Pondicherry. B, a resident of Madras, bought goods from A in both shops. A obtained decrees against B in both places B has property only in Madras. Advise A how he may enforce payment, and give your reasons.

VII. B, in Bangalore, uttered a defamatory statement, to the effect that A, a post-mistress employed in Madras, was unchaste. A was dismissed in consequence, and sued B in Madras for damages. B pleaded that no cause of action arose in Madras, and therefore the Court had no jurisdiction, B being a resident of Bangalore. Is the plea good? Give your reasons.

VIII. When a Sessions Court on appeal confirmed the conviction of a Magistrate on a question of fact, is it open to the High Court to reverse the judgment on the ground that the witnesses should not have been credited? Give reasons for your answer.

IX. How should a Magistrate proceed to whom a report is made that a riot imminent between (1) a crowd of Hindus going along a street in procession past a mosque with music, and (2) a crowd of Muhammadans who object to music being played within 100 yards of the mosque, and are prepared to use force if necessary to silence the music?

X. Give examples showing when it is and when it is not necessary

to state in the charge the particulars of the manner in which an offence is alleged to have been committed.

XI Under what circumstances and by what Court can a person charged with a non-bailable offence be lawfully admitted to bail?

XII. A, a European British subject, was sentenced to Rs. 50 fine by a District Magistrate for tearing up a promissory note executed by him to B.

B, a Hindu, was sentenced to six weeks rigorous imprisonment by a Presidency Magistrate for a similar offence.

A and B each desire to have their convictions set aside. Advise them what steps to take, and give your reasons.

THURSDAY, 6TH FEBRUARY, 10 A.M. TO 1 P.M.

EQUITY JURISPRUDENCE.

I. Discuss the rules of equity as to "contribution", and illustrate their operation by a case (1) of mortgage, and (2) of general average

II. An Englishman domiciled in England dies in India, where he has both moveable and immoveable property. By his will he appoints as his executor one of his creditors, who obtains probate of the will. State and discuss the right and duties of the executor with regard to the administration of the estate of the deceased.

III. Advise A in the following cases:—

1. A was in occupation of land as a trespasser; he has been forcibly dispossessed by B, who claims title through a previous occupant.

2. B, a mortgagor, forcibly dispossessed A, his mortgagee, alleging that the mortgage and possession under it had been obtained by A by fraud.

3. B, by his will, devised land on trust for A for life, with remainder to C. A was put into possession, but C seized the title-deeds.

4. A agreed to cultivate for a certain number of years, and sell to B, the produce of three fields, being only a sublessee of one of them. His sublessor having failed to perform the covenants in his lease, the superior landlord ejected A under a power of re-entry reserved by him.

IV. A and B agreed that A should purchase for a fixed price all the indigo grown by B at any time during the next four years. At the end of the second year B repudiated the contract with A, and began to sell his indigo to others. A sues for an injunction to restrain B from selling his indigo to others. Discuss this case fully with reference to the relief which the court can grant to A; noting any difference between the rules of equity obtaining in England and the provisions of the Indian Acts as to the questions that arise on these facts,

V. A mortgaged land Y to B in 1860 and to C in 1870, and in 1880 executes a second mortgage on it to B. In 1885 A mortgages land Z to B. A now desires to pay off the mortgages of 1860 and 1870, but B claims that his three mortgages must be redeemed to-

gether. Discuss B's claim with reference (1) to the rules of English equity (apart from statute law), and (2) to the law in India.

VI. A contracted to sell a house to B for Rs. 20,000, and on the receipt of Rs. 10,000 in part payment he executed a conveyance to B, on his covenanting to pay the remaining Rs. 10,000 in three months. B, having obtained possession of the title deeds, deposited them with C, and obtained a loan from him of Rs. 12,000, but did not pay A. C now seeks to recover the principal and interest of his loan against the house. Advise A as to his rights.

VII. 1. A bequeathed "£1,000 to my wife B and £100 to my step-daughter C." A's next of kin, D, now claims the £1,100 thus bequeathed, alleging that B had a husband still living at the time when she went through the form of marriage with A.

2. A, an old man, made a gift of a large part of his property to his nephew B, who was also his legal adviser. After A's death, D his next of kin claims to have the gift set aside

Discuss the claim of D in each of these cases; and advise him as to the points to which his evidence should be directed.

VIII. State the general rules as to the appropriation of payments to debts by which a court is guided in taking an account: and illustrate them with reference to the liability of A in an account taken at the suit of D under the following circumstances:—

A, B, and C had carried on busines in partnership. A retired, the firm being then indebted to a customer D on a running account. B and C continued the business in partnership, and D continued to keep up for some time his running account with B and C.

THURSDAY, 6TH FEBRUARY, 2 TO 5 P.M.

HINDU AND MAHOMEDAN LAW.

I. Can a Hindu husband insist that his wife shall live with him before she has attained maturity?

II. Discuss the questions (1) whether a Hindu can adopt a son during the pregnancy of his wife, (2) whether a Hindu widow, who has received authority from her husband to adopt a son, can adopt a second son, in case the first dies without issue.

III. A Brahmin widow adopts a boy whose mother was a sagotra of her husband. Is the adoption valid or not?

IV. What are the powers of a Hindu father to alienate immovea able property belonging to his family when there is no antecedent debt of his to be discharged?

V What are the points to be proved, and on whom does the burden lie to prove them, in the following cases:—(1) When a creditor sues a Hindu father and his sons to recover a debt incurred by the former. (2) When the sons of a Hindu father sue to set aside sale, which had taken place in execution of a decree against the father.

VI. What is the extent of the testamentary power of a Hindu father who has sons living?

VII. Contrast the position of widows under the Dayabhaga law and the Mitakshara law.

VIII. State the law relating to the descent of accumulations made by a Hindu widow from the estate of her husband, and the extent of her power of disposal of the same.

IX. Compare the powers of a woman to give herself in marriage according to the Hindu and the Mahomedan law

X State the Mahomedan law relating to divorce.

XI. Compare the power of a guardian to sell the property of his ward according to the Hindu and Mahomedan law.

XII. In what cases do the paternal grandfather and grandmother get shares according to the Mahomedan law?

FRIDAY, 7TH FEBRUARY, 10 A.M. TO 1 P.M.

GENERAL JURISPRUDENCE.

I. Explain what is meant by the expressions *jus in rem* and *jus in personam*, and point out the difference between them.

II. State how you would decide the following cases, and give your reasons:—

1. A is bound to B to deliver a horse or a cow. A directs his agents to make delivery accordingly One of the agents delivers the cow, and the other agent delivers the horse, not knowing that the cow was delivered. A claims the horse. B offers to give up the cow.

2. A and C are jointly bound to B to deliver a horse or a cow, A delivers the cow and subsequently C, being ignorant of that fact. delivers the horse also C claims the horse. B offers to give up the cow.

3. A makes a bequest in terms "my brother B shall be given the horse, X, or the cow, Y." B claims the horse. The executors offer to give up the cow.

III. What is the legal effect of death upon remedies which the deceased was legally entitled to?

IV State the different methods of prosecution of rights under the Roman Law, noticing their respective peculiar characteristics.

V. How many kinds or classes of infamia are there, and what are their respective characteristic features and legal effects?

VI. "Civil injuries are *private* wrongs, and concern individuals only. Crimes are *public* wrongs, and affect the whole community." Discuss the soundness or otherwise of the distinction thus drawn.

VI. Classify laws with reference to the mode in which they are made known.

VIII. It is said that among joint wrong-doers there is no right of contribution. Why is it so? Is this rule subject to any and what limitation or limitations? Give full reasons.

IX. 1. What are the legal ideas contained in the expression "thing"

2. Can a person be ever placed in the position of a thing If so, under what circumstances? Illustrate your answer.

X. 1. What rights are inalienable?

2. How does a renunciation differ from a disclaimer and a release?

FIRST L.M.S. DEGREE EXAMINATION, 1889.

MONDAY, 1ST JULY, 10 A.M. TO 1 P.M.

CHEMISTRY.

I. Explain :—

1. Why the temperature of water, when it is boiled in an open vessel, does not exceed 100° C., though the application of heat be continued;

2. Why the boiling point of water is lower at the top than at the foot of a mountain

3. In what respect water is said to be an exception to the rule that bodies expand when heated and contract when cooled; naming also some metals which are exceptional in a similar way.

4. Why standard atmospheric pressure is said to be equal to a pressure of 14·7 pounds per square inch.

II. 1. Describe how the specific gravity of a liquid may be determined :—(*a*) by the balance with the flask, (*b*) by the balance without the flask.

2. A light substance, which requires 15 grammes to sink it, displaces 60 grammes of water. Find the specific gravity of the substance.

III. Marsh gas :—

1. How is it usually prepared, and what are its properties?

2. How many volumes of air are required to completely burn one volume of this gas, and what volume do the products of combustion occupy?

3. What is the empirical and the molecular formula of the gas, and how is each formula obtained.

4. Give the names and formulæ, and describe the method of preparation and the properties of the two halogen substitution products of marsh gas which are most commonly used in surgical practice.

IV. Describe the results of the following experiments, expressing the changes which occur by means of symbolic equations :—

1. Pouring oil of vitriol over common salt.
2. Do. bone ash.
3. Heating oil of vitriol with ethyl alcohol.
4. Heating hydrochloric acid with metallic tin.
5. Adding a solution of stannous chloride to one of corrosive sublimate.
6. Adding ammonium hydrate (gradually to excess) to a solution of blue vitriol.

V. 1. Describe the preparation and properties of the allotropic forms of sulphur, pointing out their physical differences; and state what proof there is of their chemical identity.

2. Describe the preparation and properties of the two best known acid-forming oxides of sulphur.

VI. 1. How many compounds of phosphorus and hydrogen are known?

2. How is the gaseous compound obtained pure, and why is it spontaneously combustible in air, as usually prepared?

3. What takes place when the gas is passed through solutions of copper sulphate and silver nitrate?

VII. 1. What is the most important ore of mercury, and how is the metal obtained from it?

2. How is calomel prepared from corrosive sublimate?

3. How is it freed from traces of the latter?

4. How is it distinguished from the latter?

VIII. 1. How is acetic acid obtained from alcohol?

2. What is glacial acetic acid, and how is it obtained?

3. Name and give the formulæ of two well-known poisonous compounds which acetic acid forms with metals.

MONDAY, 1ST JULY, 2—5 P.M.

MATERIA MEDICA.

I. State the probable mode of action of emetics, the peculiarities in the operation of sulphate of zinc, ipecacuanha, and tartarated antimony, and their several doses.

II. What is the action of (1) permanganate of potash, (2) iodoform, on organic substances, and what therapeutic applications are founded on them?

III. To what natural orders do the following drugs belong? Give their physiological action and medicinal uses, and enumerate the preparations in the Pharmacopœia, with their doses:—Ergota, Nux Vomica, Digitalis.

IV. Enumerate the drugs in the Pharmacopœia which are obtained from the following natural orders of plants, and the part of the plant which is used in each:—Loganiaceæ, Ranunculaceæ, Atropaceæ.

V. Enumerate the ingredients in the following preparations:—Mistura ferri composita, Pilula cambogiæ composita, Pulvis opii compositus, Tinctura cardamonii composita, Unguentum hydrargyrio compositum, Trochiscus acidi tannici.

VI. Give the medicinal uses and the preparations in the Pharmacopœia of atropinæ sulphas, and morphinæ hydrochloras. What are the effects of giving these alkaloids together?

TUESDAY, 2ND JULY, 10 A.M. TO 1 P.M.

PHYSIOLOGY.

I. State the reaction (acid, alkaline, or neutral) of the following:—blood, milk, pancreatic juice, chyle, splenic pulp, urine, intestinal juice, chyme, secretion of sudoriferous glands.

II. What are the composition and microscopical appearances of milk? Describe the changes which it undergoes (1) when it ferments, (2) when it is acted on by gastric juice.

III. Describe the structure, both macroscopic and microscopic, of a human canine tooth.

IV. Enumerate the different glands which occur in the human subject, classifying them as secretory, excretory, and blood elaborating. What are the differences of function of the three classes?

V. What is the normal temperature of the human body? To what variations is it liable during the course of twenty-four hours? Describe the chief factors by which the body temperature is regulated. How do you account physiologically for the sensation of feeling hot and cold?

VI. Trace in detail the course of the blood from the left carotid artery to the left lung.

VII. What are the conditions of the walls of the left ventricle and the blood supply of its cavity during the following incidents?

1. Systole of left auricle. 2. Systole of right ventricle 3. Diastole of right auricle. 4. Systole of right auricle.

TUESDAY, 2ND JULY, 2—5 P.M.

ANATOMY.

I. Enumerate the sesamoid bones, and give the relations of each to parts where they are situated.

II. Name the structures between the layers of the broad ligaments of the uterus, and give the position and connections of each structure.

III. Define the following terms, and give examples of each form of articulation:—synarthrosis; schindylesis; gomphosis; diarthrosis; enarthrosis; ginglymus.

IV. Describe the parts seen in the floor of the lateral ventricle of the brain.

V. Name the structures seen, and give their position to each other, in a transverse section of the arm two inches above the elbow joint.

VI. Describe the popliteal artery; trace its branches, and give their anastomoses.

SECOND L.M.S. DEGREE EXAMINATION, 1889.

MONDAY, 8TH JULY, 10 A.M. TO 1 P.M.

MEDICINE.

I. Describe the symptoms of typhoid fever during the first, second, and third weeks, respectively. Make a tracing on the chart supplied of the temperature of a case of this disease, ending in recovery on the 21st day.

II. Describe fully an attack of epilepsy. Name the drug which usually arrests this disease. How may it be administered, and for what length of time should it be given after the last attack? What other drugs may be administered with it?

III. Describe the causes of emphysema of the lungs. Give the physical signs, complications, sequelæ, and treatment of this disease.

IV. Describe fully the physical signs of (1) simple hypertrophy, (2) simple dilatation, and (3) hypertrophy combined with dilatation of the heart.

V. Enumerate the causes of diarrhœa. Describe the symptoms of the varieties of this disease. Give the treatment.

VI. Define acne. Enumerate its varieties. Describe the treatment.

MONDAY, 8TH JULY, 2 TO 5 P.M.

SURGERY AND OPHTHALMOLOGY.

I. Describe the pathology, clinical characters, and treatment of carbuncle of the neck in an old person. What different modes of death are met with in such cases?

II. Explain anatomically the course which the blood takes to the lower extremity after ligature of the external iliac artery. Describe the operation.

III. What are the various causes giving rise to stricture of the rectum? Give the treatment in each case.

IV. What are the various causes of acute laryngitis? Give the treatment in each form.

V. What is keratitis? Give its various forms, and the treatment for each.

VI. Describe the operation of iridectomy. What are the dangers attending the operation? In what cases should it be performed?

TUESDAY, 9TH JULY, 10 A.M. TO 1 P.M.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

I. How would you manage a pelvic presentation?

II. What do you understand by "accidental hæmorrhage"? How is it divided? What are the symptoms? What the prognosis? How would you treat a case?

III. What are the conditions necessary for podalic version by the internal method? Describe the operation.

IV. How would you treat a case of excessive vomiting during pregnancy?

V. What do you mean by leucorrhœa? What are its various sources? What are the indications for treatment?

VI. How would you diagnose a case of membranous laryngitis; and what are the indications for performing tracheotomy?

TUESDAY, 9TH JULY, 2—4 P.M.

MEDICAL JURISPRUDENCE.

I. What do you understand by ecchymosis from violence? What enables you to determine the period during which an ecchymotic patch has existed? Mention any circumstance under which severe

violence may cause the death of a person without any ecchymosis or injury to the skin.

II. Hanging—What are the external post-mortem signs? What are the modes of death by hanging? A body being still suspended, you are called in by the Police: what points would you note?

III. What salts are liable to be mistaken for oxalic acid? How would you proceed to test for the presence of oxalic acid in organic liquids?

IV. Criminal abortion is practised on a woman in the fourth month of her pregnancy, the instrument employed being a pointed piece of bamboo. Pain, tympanitis, and fever set in; and the woman dies within three days. What post-mortem signs would you expect to find?

V. Describe the post-mortem appearances in a case of death by drowning. What circumstances would lead you to infer that the case was one of suicide or the reverse?

WEDNESDAY, 10TH JULY, 10 A.M. TO 12.

HYGIENE.

I. State your opinion fully concerning the advantages and disadvantages of the use of water derived from (1) wells, (2) springs, and (3) rains, for drinking purposes. Describe a model of a good well.

II. Give the history of any particular instance where the use of contaminated water has led to an outbreak of typhoid fever, showing exactly wherein the danger lay.

III. What impurities are likely to occur in the rooms of the sick? Describe any method of detecting these impurities.

Which do you think is the best gaseous purifier of impure air? State exactly how it will act.

IV. Which nitrogenous vegetable food would you recommend for use? In what form would you use it? State its average composition.

V. What are the chief points to be considered with reference to the sanitary condition of a soil?

VI. In case of an outbreak of cholera in any small town or village, state what precautions you would take, and what instructions you would give the local authorities, to enable them to arrest the epidemic.

PRELIMINARY SCIENTIFIC EXAMINATION, 1889.

MONDAY, 1ST JULY, 10 A.M. TO 1 P.M.

CHEMICAL PHYSICS AND CHEMISTRY.

I. Name, describe the properties of, and mention the uses of (1) the naturally occurring and (2) the artificial varieties of carbon. This element exhibits marked differences from all other elements; mention these differences, and illustrate them by examples.

II. What is the composition of bleaching powder; how is it manufactured; to what are its bleaching and disinfecting properties due?

III. How is (1) anhydrous, (2) aqueous hydrocyanic acid prepared?

This body is both a weak acid and a weak base: to what do you ascribe these properties? How may hydrocyanic acid be converted into formic acid?

IV. What is meant by the *theory of types*, and which are the most important types to which bodies are referred? Write the following bodies on the water type:—caustic potash, alcohol, nitric acid, acetic acid, calcium hydroxide, glycol, sulphuric acid, bismuth hydroxide, glycerine, phosphoric acid, ether, acetic anhydride, acetic ether.

V. With regard to urea, state the following particulars:—

(1) When, how and by whom it was fist synthesized: and the influence this discovery had upon chemistry.

(2) The manner in which it can be extracted from urine.

(3) The different methods in use for determining the quantity present in urine.

(4) The way of preparing it from potassium ferrocyanide.

VI. Describe the manufacture of oil of vitriol from pyrites and sodium nitrate. What impurities does acid so prepared contain, and how may they be detected and removed? Give examples of the different kinds of salts which sulphuric acid forms.

VII. What are aldehydes; how are they obtained (1) from fatty acids, (2) from alcohols; what are their most marked properties; and to what other class of compounds are they most closely related?

VIII. State in the form of an equation, the relation between the volume of a given mass of any gas at any given temperature and pressure and its volume at any other temperature and pressure.

A certain mass of air at 15°C and 740mm. pressure has a volume of one cubic decimetre: what will be its volume at 22°C and 710mm.?

IX. What are the requirements of a good balance? How may the true weight of a body be found by means of a balance with arms of unequal length? What is meant by 'double weighing'?

X. Explain the term 'mechanical equivalent of heat.' By what means has it been determined?

XI. Mention three different methods by which a current of electricity may be produdced and maintained, and describe the apparatus employed in each case.

TUESDAY, 2ND JULY, 10 A.M. TO 1 P.M.

BOTANY.

I. Describe in technical language the plants marked A and B.

II. Give a brief account of the structure and development of the archegonium of a fern, and contrast it with that of a conifer.

III. Why are *light*, *heat*, and *moisture* necessary for the proper development of plants?

IV. Write out the composition of a solution suited for the water-culture of a bean, and explain for what particular purpose each ingredient is used.

V. Describe the development and structure of a stoma. What

is its function? Mention the chief factors by means of which transpiration in plants is accelerated or diminished.

VI. Give the essential characters, properties, and chief medicinal plants of the N.O. Cruciferæ. What explanations have been given of the structure of the flower in this order? Discuss them.

FIRST M.B. & C.M. EXAMINATION, 1889.

MONDAY, 1ST JULY, 10 A.M. TO 1 P.M.

COMPARATIVE ANATOMY.

I. Give an account of the development of the Porifera.

II. Describe the structure and life cycle of *Distomum hepaticum*.

III. Describe the chief structural peculiarities of *Balanoglossus* and of *Amphioxus*. How would you classify these animals, and why?

IV. Give an account of the structure and distribution of the Cyclostomi. What genera are referable to this group?

V. Compare the fore-limb in the following animals:—Pigeon, Ox, Horse, Bat.

VI. Describe the different types of dentition among mammalia.

MONDAY, 1ST JULY, 2—5 P.M.

MATERIA MEDICA.

I. Describe the modes of action of diuretic medicines. Name and classify the more important diuretics according to their action on the different structures of the kidneys.

Write out three prescriptions from this class suitable for use in general dropsy.

II. To what natural orders do the following drugs belong:—Aconite, Belladonna, Physostigma? Give their physiological action and medicinal uses, and enumerate their preparations in the Pharmacopœia with their doses.

III. Enumerate the drugs in the Pharmacopœia which are obtained from the following natural orders of plants, and state what part of the plant is used in each:—Umbelliferæ, Liliaceæ, Convolvulaceæ.

IV. What drugs are incompatible with the following:—liquor ammoniæ acetatis, ammonii chloridum, catechu, hydrargyri perchoridum, magnesii sulphas, plumbi acetas, potassii bromidum, potassii iodidum.

V. Describe the general action of arsenic on the system. Enumerate the preparations of this drug in the Pharmacopœia. Write out a prescription in full for the use of each preparation.

VI. How are the following substances prepared:—codeina, butyl choralhydras, apomorphinæ hydrochloras? In what form, for what medicinal use, and in what dose would you prescribe each of the above?

TUESDAY, 2ND JULY, 10 A.M. TO 1 P.M.

PHYSIOLOGY.

I Describe in detail the movements of the heart during a normal cardiac cycle. What are the chief variations which may occur in the heart's beat?

II. Enumerate the nerves which regulate the various respiratory movements, and state the effect on the movements of severally cutting these nerves.

III. Describe with a diagram the structure of the wall of the small intestine, and give an account of the process of absorption.

IV. What are three functions of the spinal cord? Compare the condition of two frogs, one of which has had its brain and spinal cord destroyed, and the other its brain only.

V. By what methods can you cause a contraction of the pupil of the eye? Describe the mechanism which effects this contraction.

VI. Give an account of the structure of the testis and ovary, and of the development of spermatozoa and ova, respectively.

VII. Give a short account of the chemical constituents of the organism.

TUESDAY, 2ND JULY, 2—5 P.M.

ANATOMY.

I. Give the origin, course, relations, and terminations of the musculo-spiral nerve, and name its branches.

II. Describe the development of the following bones, and the ages at which the ossific centres unite:—a vertebra, temporal bone, sternum, clavicle, os innominatum, fibula.

III. The tonsil. Give (1) its relations to contiguous structures; (2) its arterial blood supply and the sources from which the vessels arise; (3) its nerve supply.

IV. Define the following terms, and give examples of each form of articulation:—synarthrosis; schindylesis; gomphosis; diarthrosis; enarthrosis; ginglymus.

V. Describe the attachments of the short muscles of the thumb. Give their action and nerve supply.

VI. Name the structures seen, and give their position to each other, in a transverse section two inches above the ankle joint.

SECOND M.B. & C.M. EXAMINATION, 1889.

MONDAY, 8TH JULY, 10 A.M. TO 1 P.M.

MEDICINE AND PATHOLOGY.

I. Describe the eruptions in (1) typhus fever, (2) typhoid fever, (3) measles, and (4) scarlatina.

II. Describe the causes, anatomical characters, symptoms, diagnosis, and treatment of acute cerebral meningitis.

III. Describe briefly the anatomical characters of phthisis pulmonalis. Give the physical signs of this disease in all its stages.

IV. Enumerate the different varieties of aneurism of the aorta. Name the structures which are in relation with the thoracic aorta, and which are liable to pressure in aneurism of this vessel. Give the local and physical signs of this disease.

V. Describe the causes, symptoms, diagnosis, and treatment of typhlitis and perityphlitis.

VI. Give a definition of pemphygus. Enumerate its varieties, and describe the treatment.

MONDAY, 8TH JULY, 2—5 P.M.

SURGERY.

I. Describe the anatomy of the semilunar fibro-cartilages of the knee joint. Detail the symptoms produced as a result of tearing or displacement of one or other of them.

II. Whas is pyelo-nephritis? Describe its etiology, symptoms, treatment, and prognosis.

III. Under what circumstances may blood be passed by the urethra? By what signs would you distinguish its probable source? State the treatment you would adopt. Write prescriptions in full.

IV. What is meningocele? Give its pathology, its most usual situation, its diagnosis and treatment.

V. What are the various forms of pulsating tumors of bone? Give their distinctive diagnosis.

VI. Describe the fascia lata, its attachments and the openings in it What relation does this structure bear to surgical operations?

TUESDAY, 9TH JULY, 10 A.M. TO 1 P.M.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

I. You are called to a woman who has been in labour for some days; you find a hand protruding from the vagina; the child is evidently dead. What are the different means by which you may relieve the woman, and what are the circumstances that would determine your choice of any particular way? Describe the operation you choose.

II. What are the causes, symptoms, diagnosis, prognosis and treatment of inversion of the uterus.

III. Enumerate the causes and varieties of pelvic deformity, and state the usual methods by which it is diagnosed.

IV. What are the methods in use for inducing labour?

V. Give the varieties and treatment of dysmenorrhœa.

VI. What are the causes, symptoms and treatment of infantile atrophy?

TUESDAY, 9TH JULY, 2—5 P.M.

MEDICAL JURISPRUDENCE.

I. What changes would you expect to find in a dead body two, ten, and thirty hours, respectively, after death? What circumstances would modify such changes?

II. 1. Enumerate the different forms of violent death included in the term asphyxia.

2. Mention the appearances presented by the body in this mode of death.

3. Other things being equal, which is the form of apnæa most favourable for resuscitation? Give reasons for the same.

III. Explain the meaning of the following terms:—rape, vital ecchymosis, post-mortem lividity, impotence, sterility.

IV. 1. Define and classify poisons, giving an illustration of each class.

2. Mention the symptoms of poisoning by Aconitum napellus and by Atropa belladonna, drawing attention to the chief points of difference in the two cases.

3. How would you treat the cases mentioned in 2?

V. Describe fully the methods of carrying out the hydrostatic lung test. What objections have been raised against it as a test as to whether respiration has, or has not, taken place?

WEDNESDAY, 10TH JULY, 10 A.M. TO 1 P.M.

HYGIENE.

I. What inferences would you draw from the presence of organic matter, chlorine, and free ammonia in water, both individually and collectively?

II. Describe briefly the method of determining the amount of chlorine and total hardness in water. What limit would you fix for the amount of chlorine and permanent hardness in usable drinking water?

III. What proportion of carbon monoxide would you consider as an impurity in the air? What effects does it produce when respired as an impurity?

IV. Criticise the ventilation of the big theatre in the Medical College, supporting each point of your criticism by reasons.

V. What is the composition of cow's milk? Do you consider it a complete food? What is its specific gravity in South India? How do you obtain butter milk and whey?

VI. Of what use are vital statistics?

What do you understand by the "ratio of births to population," and how can it be obtained?

What is meant by "expectation of life," and how can it be estimated?

BENGAL SECRETARIAT LIBRARY

WEDNESDAY, 10TH JULY, 2—5 P.M.

OPHTHALMIC MEDICINE.

I. What is muscular asthenopia? Describe its etiology and symptoms. Mention the methods which may be employed to establish the diagnosis. Describe the treatment for its relief.

II. The third nerve. State (1) its origin; (2) the ganglionic centres with which it is connected; (3) the accurate anatomical distribution of its branches; (4) the pathological results arising from a lesion affecting it partially or completely

III. State how you corect the following refractive irregularities, and describe the methods by which you arrive at the results:—

1 A person has M. of 8 D. What lenses will be required to enable him to read small type at 50 cm.?

2. A person, aged 53 years, has V = $\frac{6}{18}$ and with + 2 D V = $\frac{6}{6}$. What lenses are necessary to enable him to read at the distance of 30 cm?

3. A person, aged 30 years, has V = $\frac{6}{36}$ and with + 1 D V = $\frac{6}{6}$. After atropine + 4 D are necessary to bring up his vision to $\frac{6}{6}$. What lenses are required to enable him to read at 30 cm.?

4. A person, aged 50 years, is fitted with — 2 D ⌒ — 1 Cy D vertical to each eye, by which distant vision is restored. What lenses would he require to read small type with comfort?

IV. State (1) what is myosis; (2) the causes which give rise to it; (3) what is the Argyll-Robertson pupil, and the pathological conditions which produce it.

B.C.E. DEGREE EXAMINATION, 1890.

MONDAY, 20TH JANUARY, 10 A.M. TO 1 P.M.

SURVEYING.

I. The parish maps of the British Ordnance Survey are drawn to a scale of $\frac{1}{2500}$. What is the length (correct to the thousandth of an inch), on the map, of the side of a square representing an acre of ground?

II. Explain why some verniers read in the same direction as the scale reads, while others read in the opposite direction.

A scale is divided to $\frac{1}{16}$ inch, and a vernier is to be constructed to read to $\frac{1}{160}$ inch. What should be the length of the vernier, and into how many parts should it be divided?

III. In making a survey with the compass and 100 ft. chain—

1. Explain how the arrows are used.

2. After the second change of arrows from follower to leader, the follower holds four arrows. What is his distance from the previous station point?

3. Having reached the next station point and set up the compass, what bearings would you proceed to take?

4. The scale of the survey is to be 6 inches to a mile. To

what degree of accuracy would it be necessary to measure offsets on the ground, and why?

IV. The following are the bearings and distances of a small compass traverse :—

Stations	Bearing Deg.	Distance Ft.
A to B	347½	1393
B to C	70	630
C to D	141	564
D to E	237	505
E to F	139½	344
F to A	217½	757

1. Plot the survey with a protractor to a scale of 200 ft. to 1 inch.

2. Reduce the figure to a triangle, and find its area in acres and sq yards.

3. State what error, if any, has been made in the compass readings.

V. A curve is to be laid out with a radius of 1320 ft. to join two pieces of straight, one of which has been pegged out. The angle of intersection is observed to be 127°-14′. The tangent is calculated, and laid off from the intersection; and the tangent point is found to lie between the 242nd and 243rd peg, and to measure 54·8 ft. from the 242nd peg, the interval between pegs being 100 ft. Find (1) the length of the tangent, (2) the length of the "secant," (3) the length of the curve, (4) the first and second odd distances, (5) the number of the last peg on the curve, (6) the first and second tangential angles.

VI. If the above curve has been laid out as far as the 249th peg, and if it is then found necessary to shift the theodolite to that peg, describe fully how you would fix the position of the 250th peg.

VII. The following are the means of measured distances and observed inclinations on a base line. The chain was tested and found correct at the commencement of work; but at the end, it measured 100 14 ft. Find the true length of the base line, and the difference of level between its extremities :—

Mean of distances	Mean of inclinations.	Computation.	Horizontal distance.	Relative altitude.	Reduced level.
576·23	—1°-31′-0″				50·42
265·72	0°-0′-0″				
387·91	+0-57-30′				

MONDAY, 20TH JANUARY, 2—4 P.M.

SURVEYING AND LEVELLING.

I. Field book of portion of a section taken along the centre line of a proposed Railway.

Back Sight Feet.	Inter't Feet.	Fore Light Feet.	Rose Feet.	Fall Feet.	Reduced Levels of Ground Feet.	Distances, Remarks, &c.
5·60					88·04	B. M. on Boundary Stone.
					88·74	10 Miles 1 chain.
					90·22	„ 2 „
					90·84	„ 3 „
					91·18	„ 4 „
					91·26	„ 5 „
					91·68	„ 6 „
					91·38	„ 7 „
					91·79	„ 8 „
12·75					91·75	„ 9 „
					93·00	„ 10 „
					97·22	„ 11 „
					100·75	„ 12 „
13·00					104·95	„ 13 „
					109·83	„ 14 „
					112·93	„ 15 „
7·89					115·63	„ 16 „
					116·25	„ 17 „
					117·27	„ 18 „
					117·97	„ 19 „
					113·92	„ 20 „
					107·92	„ 21 „

1. Make the entries required to complete the above level book, and check the accuracy of your work.

2. Plot the section to scales of 2 chains to an inch horizontal, and 20 feet to an inch vertical; draw on this Formation line, F.L. at 10 miles 1 chain being 99·17, thence to 10 mls. 6 chs. there is a falling gradient of 1 in 330, followed by 3 chains of level, and afterwards a rising gradient of 1 in 214.

II. The line along which the above section was made is on a curve to the right of 40 chains radius. Plot a plan, and find the area in acres of the land required from 10 miles 10 chains to 10 miles 16 chains inclusive, scale 40 feet to an inch; 60 feet horizontal on each side from edge of slopes is to be added for spoil, ditches, &c.

The ground slopes down 1 in 5 from right to left, width at formation 20 feet, slopes 2 to 1.

N.B.—*The remainder of the afternoon will be devoted to a practical examination in the use of surveying and levelling instruments.*

MONDAY, 20TH JANUARY, 10 A.M. TO 1 P.M.

MECHANICAL ENGINEERING.

I. To what height must a safety valve $2\frac{1}{2}$ ins. dia. lift from its seat to allow a free escape of steam equal to the area of the valve?

II. A hydraulic crane has attached to the ram and moving with it, a double block; the chain is rove through this moveable block, through a fixed double block below, and is also fixed below. What pressure will be required on the ram to lift one ton at the end of the chain, and what is the ratio of lift between the ram and the load at the end of the chain?

III. Required for the main shaft of a workshop, a pulley which will drive the cutter of a woodworking machine at 2000 revolutions per minute. The main shaft runs at 150 revolutions per minute. The dia of the pulley on the cutter shaft of the machine is 8 ins., and it is driven through a counter shaft, the large pulley on which is 36 ins. dia. and the smaller one 12 ins. dia. What must be the dia. of the pulley on the main shaft?

IV. The cover of a steam cylinder, to work with a pressure of 130 lb. per sq. in., is to be secured by bolts. Pitch circle of bolts 21 ins. dia. What must be the number, pitch, and dia. of the bolts, so that the strain per sq. in. of section in them shall be about 6000 lb? *N.B.*—Dia. of bolt to be fixed to the nearest $\frac{1}{8}$ in. Depth of thread may be taken approximately at ·08 in. Pitch of bolts for practical reasons not to exceed $6\frac{1}{2}$ ins. or be less than 5 ins.

V. A cylindrical boiler is 3′-6″ internal dia. Thickness of plates $\frac{1}{2}$ in. Longitudinal seams single rivetted with rivets $\frac{3}{4}$ in. dia. and $1\frac{1}{8}$ ins. pitch. Pressure of steam 120 lb. per sq. in. What is the strain per sq. in. of plate in the longitudinal seams, and the ratio of strength between these rivetted joints and the solid plate?

VI. A fly wheel runs at 100 revolutions per minute. The rim of the wheel is 15 feet mean dia., it weighs 3 tons, and is bolted together in 4 segments. What is the tension to be provided for in the fastenings of rim of the wheel, neglecting the strength of the arms?

VII. A loaded centrifugal governor (Porter type) of a steam engine revolves at 240 revolutions per minute. The links or rods sustaining the load are equal in length to the ball rods. The balls weigh 4 lb. each, and the load weighs 48 lb. What will be the vertical height from the plane of revolution of the balls to the point of suspension?

MONDAY, 20TH JANUARY, 2 TO 5 P.M.

MECHANICAL ENGINEERING.

N.B.—*Sketches of the following details are to be made freehand, of small size and not to scale. Centres and centre lines to represent joints*

or pins and straight rods may be used where the meaning can be clearly illustrated by them without filling in details.

I. Illustrate by sketches reversing gear for steam engines :—

1. Link motion with shifting link.
2. Link motion with Allan's straight link.
3. Joy's valve gear.

II. Illustrate by a sketch parallel motion for a beam engine.

III. Illustrate by sketches the following kinds of lubricators, and state to what particular purposes each is adapted :—

1 Simple cup with siphon wick.
2. Needle lubricator.
3. Lubricator worked by condensed steam

IV. Explain the action of the hydraulic ram and illustrate by a sketch.

V Explain the action of the injector and illustrate by a sketch.

TUESDAY, 21ST JANUARY, 10 A.M. TO 1 P.M.

MECHANICAL ENGINEERING.

I. What is the volume of a cubic foot of water converted into steam at 212°; the volume of 1 lb. of steam at 212°; the weight of a cubic foot of steam at 212°.

II. Define a horse power; a unit of heat; the mechanical equivalent of heat.

III. What are the chemical ingredients of ordinary coal; what is the calorific power of an ordinary sample of coal in heat units, also in lb water evaporated from and at 212°?

IV. Explain the chemical process of combustion of coal in a furnace, and the method of estimating its calorific power.

V. Work out the annexed indicator card; give the percentage of the stroke at which steam is cut off, and shew the point at which the exhaust closes. Calculate from the diagram, not by formula, the average pressure, and state the imperfections, if any, in the construction of the engine as shewn by the diagram.

VI. A high pressure single cylinder steam engine is required to indicate 100 H.P. at 100 revolutions per minute with a pressure of steam of 100 lb. per sq. in. Calculate :—

1. Dia. and stroke of cylinder to cut off at half stroke. *N.B.* Ratio of dia. to stroke to be about 1 to 1½; allow 8°/₀ of volume swept by one stroke of the piston for clearances, ports, &c.

2. Quantity of feed water required per day of 8 hours in lb. and gallons.

3. Quantity of fuel required per day of 8 hours in tons. *N.B* Calorific power of fuel to be taken at 14500 heat units per lb., equal to evaporation of 15 lb. water from and at 212°. Temperature of feed water 40°. Boiler will utilise for evaporation 50 per cent. of the theoretical calorific power of the fuel.

VII. What is the tractive force in lb. per pound of effective pressure

in the cylinder of a locomotive with cylinders 18 ins. dia. and 26 ins. stroke; driving wheels 4 feet 6 ins. dia.?

N.B.—*An oral examination in Mechanical Engineering will be held from 2 to 5 p.m.*

TUESDAY, 21ST JANUARY, 10 A.M. TO 1 P.M.

CONSTRUCTIVE ENGINEERING.

I. The coffer dam shewn in the accompanying diagram, figs. 1 and 2, consists of a single wall of vertical piles at 4 ft interval and horizontal sheeting planks. It sustains a pressure due to 15 ft. of water. The portions of wall on opposite sides of the dam are kept apart by square casuarina struts placed horizontally between the piles at the level of the water surface. The ultimate strength of casuarina in compression being 12,000 lbs. per square inch, estimate the scantling which the struts should have.

II. In the above coffer dam, estimate the thickness which should be given to the lowest tier of horizontal sheeting planks, which are teak. Modulus of transverse rupture for teak $f_b = 13{,}500$ lb (*i.e.* $p_b = 750$ lb.) The planks may be considered to be merely resting against the piles, and the effect of continuity over several pile intervals may be neglected, *i.e.* the planks may be taken, for purposes of calculation, as if only 4 ft. in length.

III. A tee iron bar of the section shewn in the diagram, fig. 3, is 15 ft. in length. Calculate the uniform load it will carry as a supported beam, the head of the tee being downwards, so that stresses of 6 tons in tension and 5 tons in compression may not be exceeded. The position of the centre of gravity of the section is given in the diagram.

IV. Sketch neatly the following diagrams, marking the values of the maxima ordinates, and the nature of the bounding-lines:—

1. Diagram of bending moment for a supported beam loaded with two equal concentrated loads at distances of $\frac{l}{4}$ from each extremity.

2. Diagram of bending moment for a fixed beam, uniformly loaded.

3. Diagram of shearing stress for a supported beam, carrying a uniform travelling load.

V. At a certain section of a plate girder, the flange stress is estimated at 60 tons. To meet this, the tension flange is designed of two plates and two angles as shewn in the diagram figs. 4 and 5. At this section there is a junction in one of the two plates. Design a cover plate to carry the stress across the joint. Calculate the number of $\frac{5}{8}$ in. rivets required, and shew their arrangement in a dimensioned sketch plan of half the cover plate Stresses of 5 tons in tension, and 4 tons in shear are not to be exceeded.

VI. A frame for a road bridge of 32 ft. span is of the form shewn in the diagram, fig. 6. The load is carried on the upper chord, and consists of $2\frac{1}{2}$ tons at each apex due to the weight of the bridge, and, *in addition*, $7\frac{1}{2}$ tons at each of the apices A and B due to a steam

roller standing on one side of the roadway. Find the stress in tons in each bar of the frame due to the above loads. The stress diagram may be drawn to a scale of 6 tons to 1 inch.

TUESDAY, 21ST JANUARY, 2—5 P.M.

CONSTRUCTIVE ENGINEERING.

I. When designing an arch bridge of several spans, what general considerations fix (1) the minimum waterway, (2) the maximum afflux, (3) the height of springing of arches. How may the most economic span for a girder bridge of several large spans be found, and what data are required?

II. Describe the conditions requisite for stability in a masonry arch and its abutment, and give the rules generally employed in designing masonry bridges to determine (1) the rise and thickness of arch at crown, (2) the width at top and base of the abutments, piers, and wing walls, (3) the spread and area of foundations necessary.

III. State the maximum height to which earth reservoir dams may be safely made, the proportions usually adopted, and the materials and mode of construction considered best for them.

IV. Design a W I. plate girder 1′ 2″ deep, 14½ feet long and 12 feet clear span, to carry a uniformly distributed load of 18 tons; draw neatly in pencil half plan, half elevation, and cross section at centre, scale $\frac{1}{12}$th; mark on these the dimensions of plates, angle irons, and stiffeners you would use, and the diameter and pitch of rivets. The maximum flange and web section are the only details which need be *calculated*.

V. Sketch neatly and describe "nippers," and "lewis," used for lifting large stones by means of hoists or cranes, and explain by sketches how long stones for lintels, columns, &c., may be quarried

VI. Draw in pencil, to a scale of 4 feet to an inch, a teak king post roof truss for a tile roof 20 feet span, trusses 8 feet apart. Write on the drawing the name and dimensions of each member, and make enlarged sketches of the joints you would use in framing the king post to rafters and tie, and rafters to tie beam. Calculations for scantlings are not required.

WEDNESDAY, 22ND JANUARY, 10 A.M. TO 1 P.M.

HYDRAULICS.

I. The following are the levels connected with a tank weir 62½ ft. long:—

Top of bund	...	...	29·57
M W. L.	...	...	28·32
F. T. L.	...	...	24·32
Bed of surplus channel		...	20 00

It is proposed to lengthen the weir so as to increase the mar-

gin between M W. L. and top of bund to 3 ft. What length of weir must be added?

II. Enumerate (without describing) the modes you are acquainted with for determining the discharge of rivers

The catchment basin of the Cooum above Madras is 265 sq miles Some distance up the river, at Koratur anicut, above which the catchment area is 200 sq. miles, the flood discharge, calculated from the heads on the anicut in a "maximum" flood, is 10,600 c. ft. per sec. Estimate the maximum flood discharge at Madras

III A channel is to be constructed from a river to irrigate 2000 acres. The river records show that during September, that month of the irrigation season when the river is lowest, there is an ample supply of water from freshes during 16 days. In the intervals between the freshes not more than 12 c. ft per sec. is available for use. What should be the capacity (*i.e.*, the discharging power) of the channel?

If it be decided to assign a velocity of 3 ft per sec., and to give a depth of 2 ft. for full supply, and side slopes 1 to 1, determine the bottom width and the requisite fall

IV During the flood which destroyed the Kali Nadi aqueduct in 1885, the depths of water in the river on the upstream and downstream sides of the aqueduct were 37 ft and 24 ft. respectively, thus giving an afflux of 13 ft. The lineal waterway was 275 ft., and the velocity of approach 3 ft. per sec. Estimate the flood discharge of the river.

V. A siphon discharging over a channel bank is 60 ft in length and 12 inches in diameter What will be its discharge when the effective head is 6 ft.?

VI. A pipe main 4800 ft. long is to be laid with a fall of 1 in 192, and is required to deliver 3250 galls per minute at a pressure of 10 lb. per square inch. The head over the inlet orifice is 10 ft What should be the diameter of the pipe?

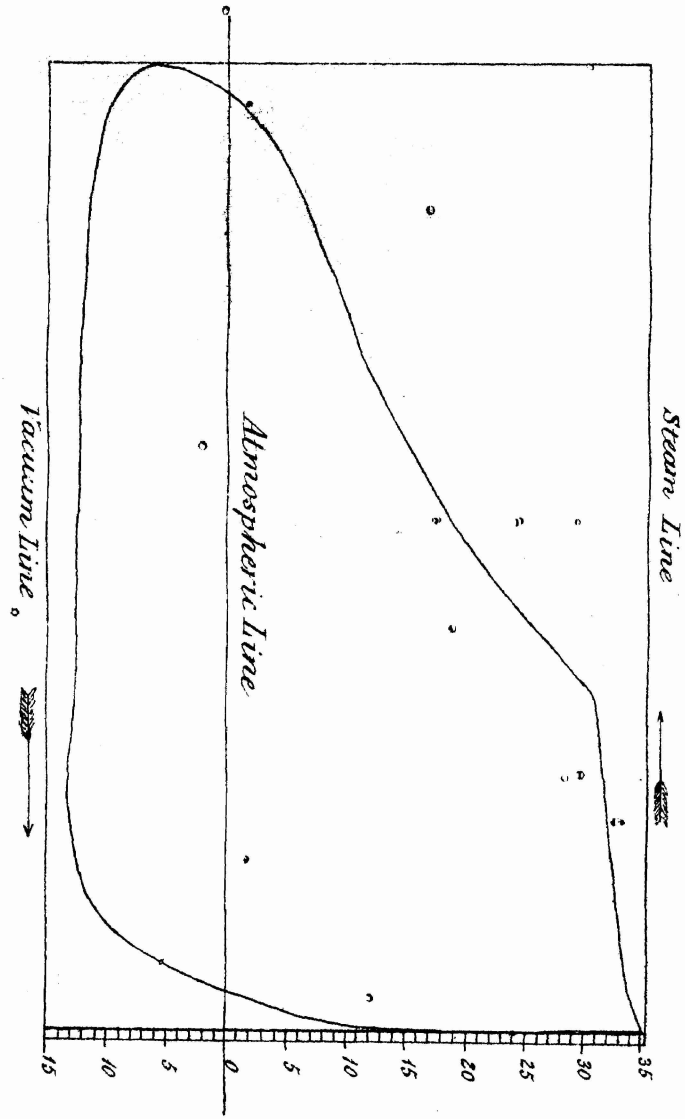
VII. A channel is to be designed to carry a discharge of 350 c. ft per sec. with a velocity of 2½ ft. per second and side slopes 1 to 1. The levels of the country are such that a fall of 1 in 3600 is considered suitable. Sketch the section of the channel. The appropriate coefficient in the expression $v = c\sqrt{rs}$ can be selected from the following table. The channel need not be designed as one of minimum border.

H. M. D.	3 0	3·2	3 4	3·6	3·8	4·0	4·2	4·4	4·6	4 8	5·0
C	70	72	73	74	75	76	77	78	79	80	80

WEDNESDAY, 22ND JANUARY, 2—5 P.M.

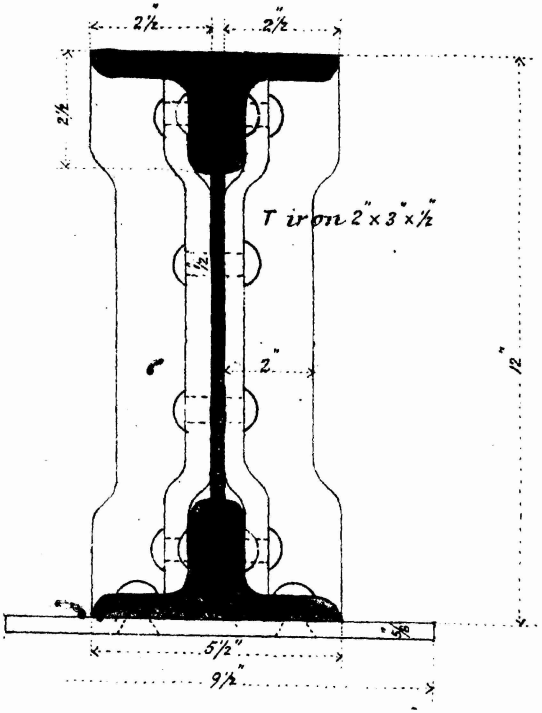
ESTIMATING.

I. Estimate the cost of the following works from the accompanying drawings —



Scale $\frac{1}{16}$.

SECTION



SCALE ¼

1. A clay and rock cutting 132 feet long, clay at four annas rock at two rupees a cubic yard.

2. A W I. girder for a railway bridge 12 feet span, at £12-0-0 a ton.

THURSDAY, 23RD JANUARY, 10 A.M. TO 1 P.M.

EUCLID AND ALGEBRA.

I. Prove that the straight lines which join the extremities of two equal and parallel straight lines towards the same parts are themselves equal and parallel.

Prove that the straight line which joins the middle points of two sides of a triangle is parallel to the third side.

II. Prove that angles in the same segment of a circle are equal.

Two circles whose centres are A and B intersect at right angles in C. Any straight line through B cuts the circle with centre A in P and Q, and CP and CQ meet the other circle in R and S respectively. Prove that RS is perpendicular to BQ.

III. Show how to inscribe in a circle a triangle equiangular to a given triangle.

Compare the area of an equilateral triangle inscribed in a circle with the area of a regular octagon inscribed in the same circle.

IV. When is a finite straight line said to be cut harmonically? Prove that the base of a triangle is cut harmonically by the internal and external bisectors of the vertical angle.

V. Prove that if a straight line be prependicular to a plane, any plane passing through it shall be perpendicular to that plane.

Show how to draw a plane which shall contain a given straight line and be perpendicular to a given plane.

VI. 1. Eliminate x, y, z, from the equations

$$x + y + z = a$$
$$x^2 + y^2 + z^2 = b^2$$
$$x^3 + y^3 + z^3 - 3xyz = c^3.$$

2. Solve the equations

$$3(x^2 + y^2) - 2xy = 27$$
$$2(x^2 + y^2) - 3xy = 8$$

VII. Give Euclid's definition of proportion, and prove that if the four quantities, a, b, c, d, are proportionals according to this definition, $\frac{a}{b} = \frac{c}{d}$.

If $\frac{x}{2a - b + 2c} = \frac{y}{2b - c + 2a} = \frac{z}{2c - a + 2b}$, prove that

$$\frac{2x + 2y - z}{a} = \frac{2y + 2z - x}{b} = \frac{2z + 2x - y}{c}.$$

VIII. Show how to find the sum of any number of terms of a geometrical progression; and insert n geometrical means between the two quantities $a^{\frac{p}{q}}$ and $a^{\frac{q}{p}}$.

Find the sum of n terms of the series

$$a + \frac{a(a+b)}{a-b} + \frac{a^2(a+2b)}{(a-b)^2} + \frac{a^3(a+3b)}{(a-b)^3} + \ldots$$

IX. Apply the binomial theorem to find the square root of 24 to three places of decimals.

X. Explain how in the common system of logarithms the characteristic of the logarithm of any number can be determined by inspection.

A Municipality borrows a lakh of rupees at 5 per cent. per annum compound interest. If the debt and interest are to be paid off in equal annual instalments, find the amount of each instalment.

THURSDAY, 23RD JANUARY, 2 TO 5 P.M.

MENSURATION AND PLANE TRIGONOMETRY.

$\pi = 3{\cdot}14159$.

I. Explain what is meant by the circular measure of an angle.

Assuming that $\sin\theta$, θ, and $\tan\theta$ are in ascending order of magnitude, θ being the measure in radians of an angle less than a right angle, prove that $\sin\theta > \theta - \frac{\theta^3}{4}$, and that the measure in seconds of a small angle whose measure in radians is α is approximately $\frac{\alpha}{\sin 1''}$.

II. Show how to find an expression for all the angles that have a given tangent.

Solve the equations:—

$$(1 - \tan\theta)\sec 2\theta = 2(1 + \tan\theta);$$

$$\sin\theta(2\cos\theta - \sec\theta) + (\cot\theta - 2)\cos 2\theta = 0$$

III. Find the area of a triangle in terms of a side and the three angles.

The area of a triangle ABC is 10 acres, and the angles A and B are $36^\circ\ 12'$ and $74^\circ\ 17'\ 25''$ respectively. Find the length of the side opposite to the angle C.

IV. Investigate formulæ adapted to logarithmic computation for finding the third side of a triangle when two sides and the included angle are given.

A and B are points on opposite sides of a lake, C a point directly accessible both from A and from B. The distances AC, BC are respectively 1 mile and 2 miles, and the angle ACB is $47^\circ\,[21''{\cdot}5]$. Find the distance AB

V. A person standing at a point due south of a church spire observes the elevation of the spire to $64^\circ\ 32'\ 20''$, and after walking 80 yards towards the west he finds the elevation of the spire to be $37^\circ\ 21'\ 30''$. Find the height of the spire and its distance from the second point of observation.

VI. A wheel A, 6 feet in diameter, is to drive a wheel B, 2 feet in diameter, by means of an endless band passing tightly round

both wheels. If the distance between the centres of the wheels is 8 feet, find what must be the length of the band, (1) if the wheels are to move in the same direction, (2) if they are to move in opposite directions [that is, (1) if the band does not cross itself between the wheels, (2) if it crosses].

VII. Prove that the area of the curved surface of a frustum of a right circular cone is obtained by multiplying half the circumference of the mean section by the slant height. State the rule for finding the volume of a frustum right of a circular cone.

The depth of a pail of this form is 10 inches, its diameter at the mouth 12 inches, and its diameter at the bottom 9 inches. Find how often it can be filled from a tank containing 2000 gallons of water. (A gallon = 277·274 cubic inches.)

VIII. It is calculated that the heat received by the earth from the sun in a year would be sufficient to melt a layer of ice 100 feet thick all over the surface of the earth. Assuming the earth to be a sphere of radius 4000 miles, find the volume of this ice in cubic miles.

IX. How would you find the area of a piece of land bounded by a straight line and a curve?

Draw a plan of a field bounded by a curve and straight lines (not fewer than six), and indicate on it the measurements which you would make in order to determine the area of the field. Explain how the area is to be calculated from the measurements.

FRIDAY, 24TH JANUARY, 10 A.M. TO 1 P.M.

ARCHITECTURAL DRAWING.

Design, and draw neatly in pencil to a scale of 8 feet to an inch, working quarter plans of foundations, and superstructure; half longitudinal section, half cross section through arch crown, and a cross section of one wing wall, for a masonry arch bridge 20 feet span, to carry a road 20 feet wide between parapets, over a railway in a stiff clay cutting 19 feet deep, and 20 feet wide at F L. with slopes of 2 to 1; road surface 3 feet above ground.

The spring of the arch must be 14 feet above F.L., good foundations all over 3 feet below ground

Write on the drawings the names and dimensions of the various parts, and if time permits ink and colour any portion of your drawing you like.

FRIDAY, 24TH JANUARY, 2—5 P.M.

TOPOGRAPHICAL DRAWING.

N.B.—*Great importance will be attached to neatness as well as to accuracy of drawing.*

I. The figures on the accompanying contoured plan are the heights in feet of the ground surface above datum. AB is the centre line of a railway whose formation is level and 30 ft. above datum. Formation width 20 ft. Cutting slopes 1½ to 1. Bank slopes 2 to 1.

Draw *on the plan* the embankments and cuttings, shading them in the usual conventional manner.

II. Below the plan draw a section through AB showing the ground section, and the formation level. Vertical scale 20 ft. to 1 inch.

III. Shade with the pencil or pen, on the horizontal system, a portion of the contoured plan, where it is unoccupied by the cuttings and embankments.

FRIDAY, 24TH JANUARY, 10 A.M. TO 1 P.M. & 2 P.M. TO 5 P.M.

MACHINE DRAWING.

I. Prepare a complete and fully dimensioned working drawing of the detail of machinery placed before you (a plummer block), under conditions such as would be likely to occur in practice, that is, the object to be drawn will not be accessible from the drawing board, and must therefore be first carefully measured and sketched in a note book, and afterwards drawn out full size to a suitable scale on the drawing board.

N.B.—*As there will not be sufficient time to finish the drawings in ink and colour, they are to be prepared in good bold lines with a soft pencil. Sections to be brought prominently out by firm cross lining.*

II. Draw full size and shade in Indian ink, the small object placed before you (a pipe elbow) to illustrate the forms and positions of the shadows upon it The light in all cases to be considered as coming from the left hand top corner of the drawing board.

SATURDAY, 25TH JANUARY, 10 A.M. TO 1 P.M.

STATICS AND DYNAMICS.

$\pi = 3{\cdot}14159.$

I. State Newton's laws of motion. Explain what is meant by the terms *work, energy*. Distinguish between kinetic energy and potential energy.

A train comes with a speed of 45 miles an hour to the top of an incline 220 yards long and inclination 1 in 110 The steam is then shut off, and the train after descending the incline moves on a level road. The resistances being $\frac{1}{150}^{th}$ of the weight and $g = 32$, find how far the train will move before coming to rest.

II. Explain what is meant by the terms *mass, acceleration, force.*

A particle moves in a circle with constant speed. Find the magnitude and direction of the acceleration.

A railway train runs at the rate of 30 miles an hour on a curve of 40 chains radius. If the distance between the rails be $5\frac{1}{2}$ feet, find how much the outer rail must be raised above the inner in order that the pressure of the rails on the wheels may be perpendicular to the axles.

III. Find the range of a projectile on an inclined plane through the point of projection, and the angle of projection for which the range is a maximum.

IV. What is a simple circular pendulum? Explain how the pendulum is used to find the value of gravity.

A pendulum 38 256 inches long is observed to beat 101 times in 100 seconds. Find the value of gravity and the length of the seconds pendulum at the place of observation

V. State and prove the parallelogram of forces. Deduce from it the triangle of forces.

Three equal uniform heavy rods are jointed so as to form an equilateral triangle ABC. The joints A and B are connected by a light string of length equal to twice the length of each rod. The system is suspended by the string which passes over a smooth peg, and rests in stable equilibrium with the rod AB horizontal. Find the tension of the string, the stresses in the rods, and the magnitudes and directions of the reactions at A and C on the rod AC.

VI. Show how to find the magnitude and direction of the resultant of a system of coplanar parallel forces.

A uniform heavy beam rests in a horizontal position with its extremities supported freely. Find the bending moment at any point of the rod.

VII. Show how to find the centre of mass of a pyramid on a triangular base.

From a pyramid of height h a portion is cut off by a plane parallel to the base and at a distance d from it. Prove that the centre of mass of the frustum which remains is at a distance $\frac{d}{4}\cdot\frac{6h^2-8hd+3d^2}{3h^2-3hd+d^2}$ from the base.

VIII. What is meant by the *efficiency* of a machine? Prove that the efficiency of a screw is $\cot(\alpha+\epsilon)\tan\alpha$, where α is the inclination of the thread and $\tan\epsilon$ the coefficient of friction between the thread and the groove

The nut of a well greased screw $1\frac{1}{2}$ inches in diameter and with 6 threads to the inch, is turned by a spanner having a leverage of 18 inches If the force applied to the spanner be 60 lb. weight, what will be the pressure exerted by the screw? (The coefficient of friction between the thread and the groove is 0·076, and all other friction is neglected)

SATURDAY, 25TH JANUARY, 2 TO 5 P.M.

HYDROSTATICS AND PNEUMATICS.

I. State the general distinctions, (1) between liquids and solids, (2) between liquids and gases Explain what is meant by the *transmissibility of fluid pressure*.

Describe and draw a diagram of a hydraulic press, and explain its action.

The radii of the small and large plungers of a hydraulic press are $\frac{1}{2}$ inch and 4 inches respectively, and the mechanical advantage of the lever-handle is 12. Find what force must be exerted on the handle to produce a pressure of 6 tons weight.

II. Explain the expressions *total pressure, resultant vertical pressure, centre of pressure.*

A vertical sluice shutter, in the form of a trapezium with its parallel sides horizontal, can turn in one direction—outwards at the top—about a horizontal axis. If the depth of the shutter be 6 feet and the breadths at the top and bottom be 7 feet and 5 feet respectively, find the position of the axis so that the shutter may just begin to turn when the water begins to flow over its top.

III. How would you experimentally verify the fact that when a body is totally or partially immersed in fluid it experiences an upward thrust equal to the weight of the fluid displaced?

A ship which is provided with air-tight compartments springs a leak, so that one of the compartments is filled with water. The water is driven out by forcing in air. Will the ship rise or sink in the water during the process? Why?

IV. How would you find the specific gravity (1) of sand, (2) of cocoa-nut oil?

Hare's hydrometer consists of two vertical tubes, dipping into vessels containing water and the liquid whose specific gravity is to be found respectively, and both connected at the top with an air-pump. When the pump is worked the liquids rise in the tubes. Prove that the specific gravity of any liquid is inversely proportional to the height to which the liquid rises

V. Explain generally the conditions of stable equilibrium of a floating body. What is the *metacentre?*

A buoy consists of a thin hemispherical shell united coaxially to a thin conical shell of the same base and thickness. Prove that if the buoy floats with the hemispherical surface partially immersed, the greatest height of the conical portion consistent with stable equilibrium is $r \cot \alpha$, where $\cos \alpha = \frac{\sqrt{37}-1}{6}$ and r is the radius of the hemispherical surface.

VI. Explain the construction and use of a mercurial barometer

Obtain an expression for the difference of the altitudes of two stations in terms of the readings of the barometer at the stations.

The mean height of the barometer at the sea-level is 30 inches and the mean height at a certain hill station is 24·62 inches. Find the altitude of this station above the sea-level, having given that the specific gravity of air at a pressure of 14·7 lb. weight per square inch is 0·00129, that a cubic foot of water weighs 1000 oz., and that $\log_{10} e = 0\ 43429$.

VII. Explain the action of a siphon. Give a sketch of a siphon which you would use to empty a vessel containing kerosine oil, and state how you would start the siphon.

VIII. Explain the action of a condensing steam engine. What is *expansive working?*

Given that iron has a tensile stress of 34,000 lb. weight to the square inch, find the greatest pressure that can be sustained by a cylindrical iron boiler with hemispherical ends, the diameter of the boiler being 2 feet and the thickness of its plates $\frac{1}{10}$th of an inch.

L.T. DEGREE EXAMINATION.

MONDAY, 3RD MARCH, 10 A.M. TO 1 P.M.

PRINCIPLES OF EDUCATION.

I. What considerations would you adduce in order to show that education is a practical science resting mainly on psychological principles?

To what extent does it rest (1) directly, and (2) indirectly, on physiological principles?

II. Discuss the nature of consciousness, the conditions on which it depends, and its position among the mental faculties.

III. Compare critically the classification of the intellectual faculties given by Reid, Hamilton, and Dr. Bain. Which of these classifications is in point of *fact* usually followed by educationists, and which of them is the most fruitful from the point of view of *principle?*

IV. What is meant by the verbal memory, and what are the best means of cultivating it? Point out (1) the ways in which the verbal memory assists in acquiring and fixing a knowledge of things; (2) the ways in which it may act as a hindrance to acquisition of real knowledge.

V. Is attention a distinct faculty? Give a brief account of it. It has been said that the two great difficulties the teacher has to contend against in his pupils are (1) the *fixing* of attention on a given subject, and (2) the *mobilizing*, or rapid and effective moving, of attention from one subject to another

What means would you adopt with a view to overcome those apparently opposite characteristics?

VI. Define and exemplify Abstraction, Generalization, and Conception. What time in school life do the powers of abstract and general thinking appear? What methods would you employ for the cultivation of them? What are the mistakes the teacher is most apt to fall into in connexion with this part of education?

VII. Analyze imagination (1) both constructive and creative, (2) both scientific and poetic.

How would you deal with (*a*) the over-imaginative pupil, (*b*) the matter-of-fact pupil?

VIII. What is inference? Is there any essential or non-essential difference between the inferences drawn by children and those drawn by adults? Are there any indications that this power is possessed by the lower animals? What are the branches of knowledge best fitted to cultivate the reasoning powers?

IX. Critically examine the following:—

"In teaching children how to classify things, we must not pro-
"ceed from the individual thing upwards by gradual stages to the
"most extensive classes of things but—after the perceptive basis has
"been gained—must teach first the words that stand for the most
"extensive classes. The intermediate classes are afterwards to be
"filled in by descending from these last; for this is everywhere the
"path that the mind spontaneously takes."

MONDAY, 3RD MARCH, 2 TO 5 P.M.

PRINCIPLES OF EDUCATION.

I. Discuss the relation subsisting between our actual and our ideal states of mind from the point of view (1) of metaphysics or ontology, (2) of psychology, and (3) of pedagogics.

II. What are the chief considerations of a general nature that should be taken into account in laying down a curriculum?

III. What faculties are mainly called into exercise by the following branches of instruction respectively:—Reading, History, Arithmetic, Botany, Drawing?

IV The mental faculties and capacities are both the means and instruments through which education is carried on and the object or aim of education. Does it ever arise from this two-fold relation that the harmonious training of the faculties and capacities is liable to be sacrificed to the felt necessity of making the most of them as means or instruments?

V. Point out the use and abuse of emotional excitement (1) in intellectual training, (2) in the formation of active habits.

How are emotions related to ideas on the one hand and to actions on the other?

VI. What are the scope and limits of the influence exerted by intellectual culture on the growth of moral character?

VII. With respect to the various grounds on which it has been attempted to justify the infliction of punishment, which of them should be kept most prominently before the mind of the teacher?

What help does psychology afford the teacher in the administration of punishment?

VIII. Distinguish between Instinct and Habit. To what extent, if at all, is the former amenable to educational influences?

What is the meaning of "good" and "bad" when applied to habits?

From a psychological point of view is there any difference between the methods by which bad habits are eradicated and those by which good habits are formed?

IX. Write a brief note on the following words put by Mr. Fitch into the mouth of Socrates, pointing out the chief dangers to be guarded against in the movement now spreading throughout Southern India in favour of industrial and technical instruction:—

"Train people's hands and eyes by all means, but train the "understanding at the same time. Let your people know well the "properties of the materials he is using, and the nature and limits "of the forces he employs Let your handiwork be made subservient "to careful measurements, to the cultivation of taste and intelligence, "to the perception of artistic beauty, and then it will play a real part "in the development of what is best in the human being; but, unless "you do this, you will get little or no true culture out of carpentering, "modelling, or needlework."

TUESDAY, 4TH MARCH, 10 A.M. TO 1 P.M.

HISTORY OF EDUCATION.

I. Give a brief account of the system of education taught in the *Republic* of Plato. Compare Plato's theory of education with Aristotle's.

II. Contrast Roman and Greek education with respect to (1) their *aims*, and (2) their *methods*.

III. 1. Explain clearly the theories of education advocated by the *Humanist*, the *Realist*, and the *Naturalist* schools.

2. Name, with dates, the chief writers belonging to each of these schools, and give the titles of their principal works.

3. Trace the influence of each of these theories upon modern English education.

IV. How do you account for the fact that the Reformation had so comparatively slight an influence on the educational systems of Europe. Write short notes on (1) Erasmus, (2) Colet, and (3) Melancthon.

V. Describe the organization and curriculum of an ordinary Jesuit school, and point out what you consider to be the chief defects of the Jesuit system.

VI. 1. Give a brief analysis of the Contents of Milton's tract on education addressed to Hartlib.

2. "Rousseau tried to answer cant by paradox. He violently opposed the current "practices of his day in education by sketching "out a scheme equally full of contradictions, and equally unsatis-"factory in results." Explain and illustrate this criticism.

VII. Give an account of the life and work of Froebel.

TUESDAY, 4TH MARCH, 2 TO 5 P.M.

HISTORY OF EDUCATION.

Spencer and Bain.

I. Compare the merits of History and of Poetry as a ground work for moral teaching. How do you reconcile the importance attached by Bain to History with Spencer's statement that History, as taught in our schools, "has not the remotest bearing on any of our actions"?

II. Give and discuss Spencer's definition of "Education," and show that it necessarily implies Physical Education. On what grounds does Bain exclude the latter, and how does he consequently limit the meaning of the term "Education"?

III. Explain Rousseau's principle of the "discipline of consequences." What objections does Bain urge to the principle? What advantages does Spencer urge in its favour, and how does he meet the objection that it is difficult to treat grave offences by this method?

IV. Having regard solely to the effect of heat and cold upon nervous energy, what would you consider the best arrangement of school terms and holidays and for holding examinations in Southern India?

V. In instruction according to the law of logical sequence, what

allowance must be made for *correlation?* Show that the case is no real exception to the law.

VI. How far does Spencer support the Pestalozzian system, (1) in its principle, (2) in its practice? What explanation does he give of the fact that the system has not noticeably produced better educated men than the ordinary system?

VII. Spencer argues against dogmatism in teaching on the ground that each child's mind shall go through a process like that which the mind of humanity at large has gone through. He also shows that humanity has gone through a stage when it was the slave of dogma. How would you reconcile these apparently incongruous conclusions?

VIII. State and explain the first Law of Memory. How far can memory be judiciously cultivated? Specify some of the arts of technical memory

IX. What are the views of Spencer and of Bain as to the teaching of Grammar? How far are their views applicable to such a case as the teaching of English to Hindu boys knowing only a vernacular?

WEDNESDAY, 5TH MARCH, 11 A.M. TO 1 P.M.

METHODS OF TEACHING AND SCHOOL MANAGEMENT.

I. 1. What are the chief points to be attended to in the selection of a site for and the construction of a school building?

2. What are the advantages and disadvantages of Class Rooms?

3. Give the dimensions of a High School to accommodate 200 boys in five classes, of about equal numbers, ranging from the third to the sixth. State the number of rooms; the number, dimensions, and position of the doors, windows, and other openings; and illustrate your answer by plans.

4 State exactly what furniture and apparatus would be necessary for such a school. Show in your ground plan the disposition of the furniture, giving your reasons for so placing it.

II. What do you understand by the organization of a school? What are the objects it seeks to attain? Describe fully the different systems of organization that have prevailed in England and that which now prevails in the schools of this Presidency, and give critical remarks on each.

III. Comment on the importance and difficulties of the proper classification of boys in a school? What is the correct basis of good classification? In what cases do you think it expedient to depart from this principle? What considerations should determine the size of the classes?

IV. What principles are to be attended to in the construction of Time Tables? How would you practically proceed to make a Time Table? Draw up a Time Table showing a week's work of an Upper Fourth Class and another showing for the same period, the work of the Head Master of a High School.

V. What is meant by the discipline of a school? It is a common

maxim,—"as is the "master, so is the school." Discuss this, and point out what qualities are especially necessary in the master to secure good discipline in a school. How do gymnastics, drill, and other physical exercises tend to promote good discipline?

VI. What are the advantages and disadvantages of collective teaching? Mention the chief qualities of a good lesson of this kind, giving reasons for your opinion.

VII. Show how you would practically make use of the following generally accepted truths:—"We would proceed from the known to "the unknown, from the simple to the complex, from the concrete "to the abstract, from example to principle."

WEDNESDAY, 5TH MARCH, 2 TO 4 P.M.

METHODS OF TEACHING AND SCHOOL-MANAGEMENT.

I. Describe the Socratic method of teaching. When may it be successfully employed? Give an example fully worked out.

II. What is meant by illustration? What kinds of illustration are used in elementary teaching? Suppose you were giving a lesson on Euc. I. 7, what illustrations would you give to show that the principle proved in that proposition is one of the most common and most important in mechanical structures?

III. What means would you adopt to secure accurate spelling?

IV. What are the qualities of good writing? In teaching writing would you use such mechanical aids as are furnished by Mulhauser's system; and if so to what extent?

V. 1. State precisely how you would proceed and what illustrations you would use in giving a lesson on one of the following subjects:—(*a*) notation, (*b*) the multiplication table, (*c*) subtraction, (*d*) multiplication and division of fractions.

2. What questions would you put to a class to elicit a proper solution of the following problem? Write out as on the black-board a model solution.

A vessel is filled with a mixture of milk and water containing 80 per cent. of milk. It is half emptied and filled up with water and again half emptied and filled up with milk. What per cent. of milk does the vessel now contain?

VI. 1. How may children be induced to feel an interest in geography before they begin the systematic study of the subject?

2. State exactly what steps you would take to explain to children the nature of a map.

3. To what means would you resort for assisting the memory to retain geographical facts?

VII. Write a short essay on the influence of rewards and punishment on the discipline and moral tone of a school.